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APPLICATIONS TECHNOLOGY SATELLITE And COMMUNICATIONS TECHNOLOGY SATELLITE USER EXPERIMENTS FOR 1967-1980

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FOR

REFERENCE BOOK VOLUME I

> Nicholas A. Engler John F. Nash Jerry D. Strange

UNIVERSITY OF DAYTON RESEARCH INSTITUTE DAYTON, OHIO 45469

> August 1980 FINAL REPORT

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PREPARED FOR:
NASA-LEWIS RESEARCH CENTER
CLEVELAND, OHIO 44135



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AND

COMMUNICATIONS TECHNOLOGY SATELLITE

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LIST OF ACRONYMS AND ABBREVIATIONS

AAHS - Alaska Area Native Health Service AASA - American Association of School Administrators A/C - Aircraft AEC - Atomic Energy Commission AERO SAT - Aeronautical Satellite Program, AESP - Appalachian Education Satellite Pr/ject AFCRL - Air Force Cambridge Research Laboratories AGREE - Advance Ground Receiving Equipment Experiment AHA - American Hospital Association AID - Agency for International Development AIY - Allied Industries, Inc. ALC - American Lutheran Church ALFE - Alaska Feed Experiment ALOHA - Experimental UHF Radio Packet Switched Computer ALVA - Alaska/Veterans Administration AMA - American Medical Association APT - Automatic Picture Transmission ARC - Appalachian Regional Commission (also Ames Research Center/NASA) ARINC - Aeronautical Radio Incorporated ARPANET - Advanced Research Project Agency Computer Network Satellite System ASTP - Apollo Soyuz Test Project ATC - Air Traffic Control ATS - Applications Technology Satellite BBC - British Broadcasting Corporation BOTD = Basic Oral Language Development BOrns : - Barbados Oceanographic Meteorological Experiment CAI - Computer Aided Instruction CNAE- Comisso Nacional De Atividados Espaciais C/O - Check Out COMSAT - Communications Satellite Corporation CPB - Corporation for Public Broadcasting CRC - Communication Research Center (ANADA) CRT - Cathode Ray Tube CTS - Communications Technology Satellite CW - Continuous Wave DCP - Data Collection Platform DEA - Drug Enforcement Agency DHEW - Department of Health, Education, and Welfare DICE - Digitally Implemented Communications Experiment DISP - Department of Interior Satellite Project DOC - Department of Commerce DOD - Department of Defense DOI - Department of Interior DOT - Department of Transportation DRI - Desert Research Institute ECG - Electrocardiogram ERDA - Energy Research Development Agency- now (DOE) Department of Energy ERP - Effective Radiated Power

ESSA - Environmental Science Service Administration

ESA - European Space Agency

LIST OF ACRONYMS AND ABBREVIATIONS (Cont'd)

```
ESTEC - Centre Europeen Rechreche Et De Technologie Spatiaile
ETV - Education Television
EVM - Earth Viewing Module
FAA - Federal Aviation Administration
FDMA - Frequency Division Multiple Access
FLTAC - Fleet Analysis Center (Navy)
FM - Frequency Modulation
FSK - Frequency Shift Keying
FSU - Florida State University
GE - General Electric Corporation
GEOS - Geosynchronous Experimental Observation Satellite
GHz - Gigahertz
GMT - Greenwich Mean Time
GOES - Geostationary Operational Environmental Satellite
GSFC - Goddard Space Flight Center
GTE - General Telephone and Electronics
HET - Health/Education Telecommunications
HEW - Department of Health, Education and Welfare
HF - High Frequency
IEEE - Institute of Electrical and Electronic Engineers
IHADRAS - Interferometer High-Speed Data Rate Acquisition System
IHETS - Indiana Higher Education Telecommunications System
IHS - Indian Health Service
ISOS - International Southern Ocean Studies
ITT - International Telephone and Telegraph
JCET - Joint Council on Educational Telecommunication
KHz - Kilo Hertz
KTUH - Radio Station
KUAC - (NPR-National Public Radio) Radio Station in Alaska
KVZK - Public Broadcasting Television in Samoa
Lerc - Lewis Research Center (also LRC)
LHC - Lister Hill Center
MARAD - Maritime Administration
MARSCAN - Maritime Satellite Communication and Navigation
MATE - Mobile Analysis and Telecommunications Experiments
MCC - Maritime Coordination Center
MEDLINE - Medical Information Retrieval System
MENEHUNE - Central Communication Processor for the ALOHA System
MHz - Mega Hertz
MMW - Millimeter Waves
MOT - Ministry of Transportation (Canada)
MSHC - Mountain States Health Care
MSSCC - Multicolor Spin Scan Cloud Camera
NAFEC - National Aviation Facilities Experimental Center
NASA - National Aeronautics and Space Administration
NBC - National Broadcasting Company
NBS - National Bureau of Standards
NCAR - National Center for Atmospheric Research
NCAST - Nursing Child Assessment Satellite Training
NCER - Northern Center for Educational Research
NEA - National Education Association
NESS - National Environment Satellite Service
NHK - Nippon Hoso Kyokai
NIAID - National Institute of Allergy and Infectious Diseases
NIH - National Institute of Health
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NLM - National Library of Medicine

LIST OF ACRONYMS AND ABBREVIATIONS (Cont'd)

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NOAA - National Oceanic and Atmospheric Administration
NORPAX - North Pacific Experiment
NPR - National Public Radio
NRL - Naval Research Laboratory
NSF - National Science Foundation
NSTL - National Space Technology Laboratories
OECA - Ontario Education Communications Authority
ONR - Office of Naval Research
OPLE - Omega Position Location Experiment
OSU - Ohio State University
OT - Office of Telecommunications
PCM - Pulse Code Modulation
PDM - Pulse Duration Modulation
PEACESAT - Pan-Pacific Education and Communications Experiments
           by Satellite
PET - Portable Earth Terminal
PLACE - Position Location and Aircraft Communication Equipment
P/N - Phase Difference Navigation
PRG - Project Office Goddard
PRJ - Project Office Headquarters
PSK - Phase Shift Keying
PSSC - Public Service Satellite Consortium
RCA - Radio Corporation of America
RF - Radio Frequency
RMS - Root Mean Square
RRL - Radio Research Laboratory
R/V - Research Vessel
SALINET - Satellite Library Information Network
SAMSO - Space and Missile Systems Office
SAO - Smithsonian Astronomical Observatory
SAPPSAC - Spacecraft Altitude Precision Pointing and Showing
          Adaptive Control
SAR - Search and Rescue
SBC - Southern Baptist Convention
S/C - Satellite
SECA - Southern Educational Communications Association
SHF - Super High Frequency
SITE - Satellite Instructional Television Experiment (India)
SSB - Single Sideband
SSCC - Spin Scan Cloud Camera
SSRA - Spread Spectrum Random Access
TDRE - Tracking and Data Relay Experiment
TEAM - Televised Education Applied to Montana
TET - Transportable Earth Terminal
TOT - Terminal of Tomorrow
TRUST - Television Relay Using Small Terminals
TSC - Transportation System Center
TTY - Teletype
TV - Television
TWT - Traveling Wave Tube
UA - University of Alaska
UCLA - University of California at Los Angeles
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UDRI - University of Dayton Research Institute

LIST OF ACRONYMS AND ABBREVIATIONS (Cont'd)

UF - ATS/CTS User Form

UHF - Ultrahigh Frequency

USAF - United States Air Force

USASCA - United States Army Signal Communications Agency

USCG - United States Coast Guard

USNS - Nasa Ship

USP - University of the South Pacific

UW - University of Washington

UWI - University of the West Indies

VA - Veterans Administration

VERB - Victor Electrowriter Remote Blackboard

VHF - Very High Frequency

VIDAC - A Westinghouse system for compressing audio-visual signals

VLBI - Very Long Baseline Interferometry

VLF - Very Low Frequency

VPI - Virginia Polytechnic Institute

WAMI - Washington, Alaska, Montana, and Idaho Medical Programs

WARC - World Administration Radio Conference

WEFAX - Weather Facsimile Experiment

WHOI - Woods Hole Oceanographic Institute

WMVS - Television Station Milwaukee, Wisconsin

SECTION 1 THE ATS/CTS SATELLITE PROGRAMS

1.1 INTRODUCTION

In the twenty odd years since Sputnik was launched, the artificial satellite has been transformed from a scientific curiosity into a valuable communication tool for government and commercial applications. The spectacular growth in satellite communications is reflected in the fact that over two thousand satellites have been placed in orbit since 1958. One reason for this growth was the entrance of the private sector into satellite communications, an event that was made possible by the passage of the Communications Satellite Act in 1962. This act allowed the private sector to plan, construct and operate commercial communications satellite systems and in this way helped to accelerate the transfer of space communications technology from Government control to the private sector for development.

The successful Applications Technology Satellite (ATS) program and related research efforts by the National Aeronautics and Space Administration (NASA) are example of Government efforts to make the benefits of space communications more accessible to the private sector. The first Applications Technology Satellite (ATS-1) was placed in orbit in December 1966. Five additional satellites have been launched since then, with ATS-3, 5 and 6 achieving synchronous orbit. NASA also launched the Communications Technology Satellite (CTS) in 1976 as a joint effort between the United States and Canada. Corporations, universities, foreign

governments, Government agencies, and other institutions have eagerly responded to the opportunity to use these satellites to perform communication experiments. To date, hundreds of experiments have been performed by the private sector using one or more of the Communication satellites. Though each experiment used the satellite as a communication tool, the purpose and objective of the experiments covers an extremely wide spectrum. The variety of uses made of the satellites is important to the Government for their future planning of communications satellite programs and to a future satellite user. It is important, therefore, to catalog these experiments so that the information can be easily retrieved.

This report catalogs the information for all available user experiments and is the last report to be published under this contract. Two previous reports have been published under this contract in this topic. They are: Engler, N. A., J. D. Strange, and G. F. Hein, "Compendium of Applications Technology Satellite User Experiments, 1967-73." August 1976, University of Dayton Research Institute, Dayton, Ohio 45469, Technical Report, 77 X 70 237 (NTIS N77-30155); and Engler, N. A., J. F. Nash, J. D. Strange "Continuation of the Compendium of Applications Technology Satellite and Communications Technology Satellite User Experiments 1967-77 Volume I. "May 1978, University of Dayton Research Institute, 300 College Park, Dayton, Ohio 45469, Technical Report, CR-135416, UDR-TR-78-67 (NTIS N78-31141). Thus, this report is somewhat redundant to the first two but can stand alone as a complete source document.

Each section of the report is preceded by a description of the contents of the section and its intended use.

1.2 SATELLITE CHARACTERISTICS

This section contains a brief description of the satellites involved in the ATS and CTS programs. An appreciation of the technical capabilities of the satellites is helpful in understanding how each can be used for a particular experiment.

1.2.1 ATS-1

k.,

orbit on December 6, 1966 and is still in operation. The ATS-1 is a cylindrical, spin-stabilized spacecraft with solar cells around its periphery. The communications antennas extend from one end of the cylinder and the spacecraft payload is mounted interior to the walls of the cylinder. ATS-1 is depicted in Figure 1.1.

Since being placed in orbit over the Pacific Ccean, this satellite has performed an astonishing variety of services. It is impractical to describe all of the services performed by the satellite but an extensive list is given in Section 2. Some of the more important ones are described briefly in this section.

- Television pictures were relayed via VHF.
 Events such as the first Apollo splashdown,
 the 1968 Olympics, and President Johnson's
 visit to Australia were relayed via ATS-1.
- Cloud cover pictures, weather charts, and special messages have been transmitted since 1968 as part of the WEFAX experiment.
- The PEACESAT (Pan Pacific Education and the Communication Experiments) project of the University of Hawaii uses this satellite to

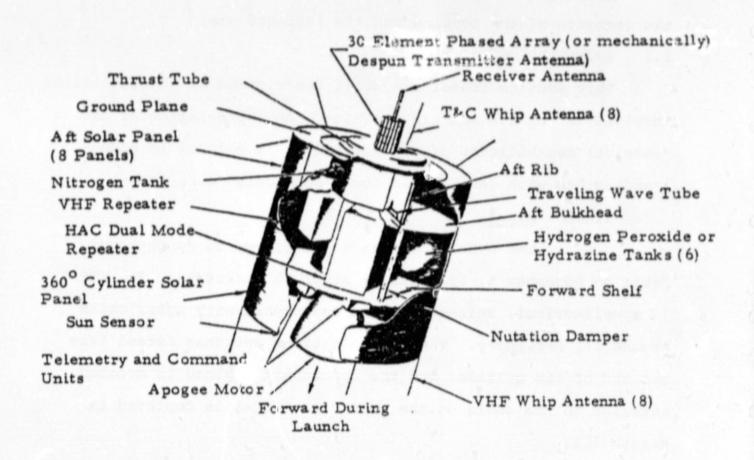


Figure 1.1. Spin Stabilized Spacecraft ATS-1 and 3 with Electronically Despun Antenna

exchange educational, medical and community services in the Pacific. PEACESAT uses two-way voice communications for all exchanges.

- State of Alaska/Department of Health, Education and Welfare (HEW) experiment. Three experimental projects are being conducted under the direction of the Alaskan Government; an educational communications experiment, a biomedical communications experiment, and a communications networking experiment. The first two are funded by HEW and the third, the networking experiment, is funded by the State of Alaska.
- The Office of Education and National Institute of Health, both of HEW, are experimenting with satellite relay over VHF of educational programs to the teacher in the classroom and the transmission and reception of medical data.
- The State of Alaska is experimenting with satellite relay of National Public Radio programs to member stations and testing kinds of equipment required to determine minimum ground station costs. A related purpose is to examine the effect of interference to reception from the Auroral zone.
- Numerous maritime communication experiments have been performed. These experiments involved the transmission of voice, teletype, facsimile and slow scan video between ships and ground stations.

1.2.2 ATS-3

The ATS-3 spacecraft was placed in orbit on November 6, 1967 and is still in operation. After a near-perfect launch, it was placed in station over the Atlantic Ocean. The physical dimensions and method of stabilization of this satellite are very similar to those of ATS-1. Some of the notable achievements of this satellite are:

• The first ground-to-satellite-to-airplane two-way communications link took place over the

Atlantic Ocean on November 21, 1967 and involved a regularly scheduled Pan American flight.

- The first color photography of the Earth from a satellite was obtained from the multicolor spin-scan camera.
- Interrogation of equipment on ocean buoys was accomplished through the ATS-3 by several different experimenters.
- One-way time dissemination experiments were conducted between fixed and mobile stations.
 Time and frequency signals were broadcast from the National Bureau of Standards in Boulder, Colorado.

1.2.3 ATS-5

ATS-5, which was launched on August 12, 1969, is depicted in Figure 1.2. Unfortunately, due to some anomalies during launch, the satellite ended up in an unplanned spin.

Because of this, many of the user experiments could not be performed. Some of those that were performed are listed below.

- L-band ranging and position location experiments demonstrated the ability to obtain useful range measurements using PM tone modulation at L-band carrier frequencies. Tests were made using both stationary and fixed platforms.
- The Maritime Administration (MARAD) project conducted a successful tests of real-time high speed (100 wpm) teletype using standard equipment. Transmission was between Mojave, California and the ship USS Manhattan.
- The FAA/Boeing communications experiment at L-band from ATS-5 to an aircraft. This experiment involved both measurements of multipath effects and tone ranging.
- A millimeter wave experiment was conducted by Westinghouse to determine the propagation correlation with rain, fading, and weather 15.3 GHz down link.

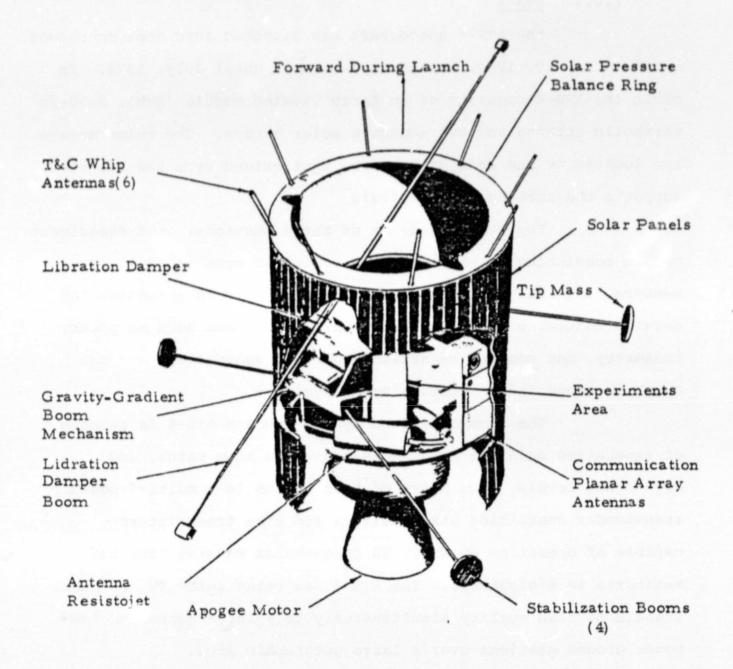
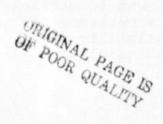


Figure 1.2. Gravity-Gradient Spacecraft ATS-5



0

0

1.2.4 ATS-6

The ATS-6 spacecraft was launched into geosynchronous orbit on May 30, 1974, and was operational until July, 1979. In orbit the ATS-6 consists of an Earth Viewing Module (EVM), a 30-ft parabolic antenna and two separate solar arrays. The solar arrays are located at the ends of two arms that extend from the hub that supports the antenna (Figure 1.3).

The EVM is made up of three sections: the experiment module consisting of earth-viewing equipment such as earth sensors, the interferometer, and smaller aperature antennas; the service module, containing housekeeping equipment such as power, telemetry, and command an attitude control subsystems; and the communications module containing RF equipment.

of generating multiple frequencies, diverse beam paths, and high-power levels. The heart of this system is a multi-frequency transponder containing six receivers and nine transmitters capable of operating on about 20 frequencies ranging from 136 megahertz to 6 gigahertz. The ATS-6 can relay color TV and other signals of high quality simultaneously to a large number of low-power ground stations over a large geographic area.

Some of the important experiments performed on the ATS-6 are noted here for reference.

 The Position Location and Aircraft Communications Experiment (PLACE) is an experiment to obtain engineering data and practical experience for determining the operational feasibility of air traffic control and maritime satellite systems using L-band.

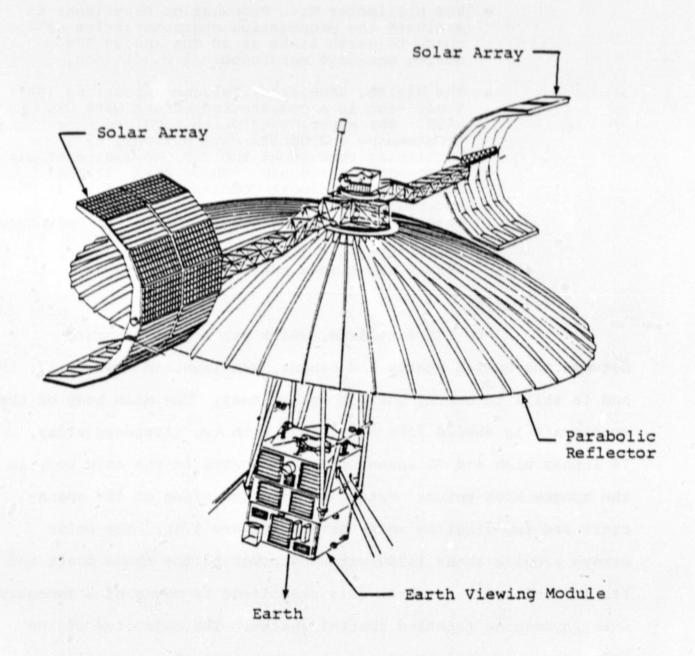


Figure 1.3. ATS-6 Configuration.

- The SITE Project was a joint effort between NASA and the Government of India. This experiment investigated the potential value of satellite instructional television for mass communication in developing countries.
- The Millimeter Wave Propagation Experiment to evaluate the propagation characteristics of space-to-earth links at 20 GHz and 30 GHz during measured meterological conditions.
- The Health, Education, Telecommunications (HET) Experiment is a cooperative effort with HEW and NASA. The experiments which involved educational programming and health care delivery to facilities throughout the U.S. consisted of six component experiments. These are: 1) The Appalachian Regional Commission Project; 2) The Veterans Administration Experiments; 3) The Satellite Technology Demonstration; 4) Washington, Alaska, Montana, Idaho (WAMI) Experiments; 5) The Alaska Health Services Experiments; and 6) The Alaska Education Experiment.

1.2.5 CTS

between the United States and Canada, was launched January 17, 1976 and is still in orbit, but not operational. "The main body of the spacecraft is shaped like a cylinder with two flattened sides, 74 inches high and 72 inches across."* Housed in the main body is the apogee kick motor. Extending from the sides of the spacecraft are two winglike solar arrays (Figure 1.4). The solar arrays provide about 1,250 watts of power to the space craft and its payload. CTS is three-axis stabilized by means of a momentum wheel/hydrazine reaction control system. The objective of the CTS program is to demonstrate the capability of a satellite carrying high-power, 200 watt, transmitting equipment operating at high frequencies to broadcast television and voice to small, low-power ground stations in remote areas. About 40 experiments *See TRW space log 1976, page 20.

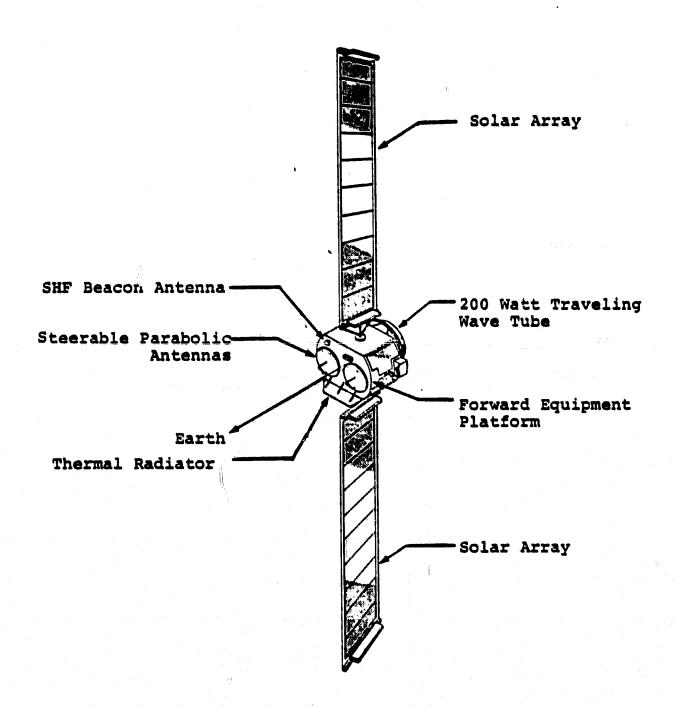


Figure 1.4. CTS Configuration.

will use CTS to demonstrate a variety of practical applications for such a capability. The satellite is also capable of transmitting through two 20 watt units. The system includes two steerable parabolic antennas. Some of the notable user experiments performed on CTS are listed in this section.

- College curriculum sharing between Stanford University (U.S.) and Carlton University (Carlton). Engineering classes and seminars were televised. Experiment featured realtime digital video compression with error correction coding to reduce bandwidth and power requirements.
- The Satellite Library Information Network (SALINET) Experiment involved training programs throughout the Rocky Mountain area using two-way communications.
- Telecommunications in lieu of transportation was investigated by Westinghouse. This study investigated the possibility of using satellite communications to conduct business within large geographically diverse industrial organizations. Terminals are located in Baltimore, Maryland and Lima, Ohio.
- The University of Toronto has used CTS in an experiment to test the use of geostationary communication satellites for real-time correlation of broad-band data output from widely separated radio telescopes. Telescopes at Algonquin Park, Ontario, Green Bank, West Virginia, and Owens Valley, California were involved.

SECTION 2 ATS/CTS EXPERIMENT DATA FORMS

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E.

Each ATS/CTS experiment is summarized here on an ATS/CTS Experiment Data Form. The basic format was taken from a form used by GSFC to summarize user experiments. The ATS-1, 3, and 5 experiment data forms presented here are, except for minor editing changes, taken directly from GSFC forms and start with experiment #102 and end with #344. ATS-6 experiment data forms were generated from data received from GSFC and from our own data base and start with #601 and end with #677. The United States CTS experiments are summarized in Section 2.3 and start with CTS-1 and end with CTS-35. Data for the CTS experiments were taken from the user meeting reports generated by Lewis Research Center. Experiment Data Forms for the Canadian CTS experiments are not included in this report. Information about the Canadian CTS Experiment can be obtained from Department of Communication, Commonwealth Research Center, Shirley Bay, Highway 17B, West of Ottawa.

The data given on these forms are the basic data of the experiment. Each form gives the initial purpose and objective of the experiment and also gives some information regarding the experimenter and sponsor. The data at the bottom of the form are auxiliary information that will aid the reader to find reports concerning the outcome of the experiment and to identify similar experiments.

SECTION 2.1

ATS-1, 3, AND 5 EXPERIMENT DATA FORMS

Experiment No. 102	
Experiment Title X-Ray Transmission	
Begin Date 16 Nov 71 Completion 16 Nov 71	•
Experimenter Duke University Medical Center	
Geographic Location Eastern U.S.	
Satellite ID ATS-1 Frequency C-Band Mode	FT
Category of Experiment Health Services/Data Transmission	on
Experiment Description On November 15, 1975 medical fluoroscopic information, pro-	
videotaped at Duke Hospital, was transmitted for 60 minut Rosman, N.C. to ATS-1 and back; the satellite was then at 150°W. The transmitted information had been obtained with ventional image-intensification systems using 525-line videomeras and one-inch recorders. The signals were used to modulate a 6.2 GHz carrier radiated by a 1 kW transmitter into the Rosman II dish. The "up" and "down" images were on adjacent monitors and the "down" image was videotaped received. The transmitted and received images were indisto the naked eye and in photographed replays of the tapes that the information capacity of the satellite link is acfor fluoroscopic transmission at normal frame rates. Radiographic (static) images obtained by viewing back-light radiographs with a Vidicon were also transmitted. These were diagnostically unsatisfactory, but this was due to the satellite of the image fed to the transmitter.	about ch con- idicon ofrequency- c working ce watched as stinguishable s, showing deduate ghted images che poor
quality of the image fed to the transmitter, rather than inadequacies in the transmission channel.	το
Report Accession Nos. 16, 55, 298	
	<u> </u>
User Form Nos. 002	
Similar Experiment Nos.	
	
Primary Keywords: Health Services, Data Transmission, X-	-Ray
Secondary Keywords: Fluoroscopy, Radiology, North Caroli Health Services Research	.na , 🦠 🧳 🤫

Experiment No					
Experiment Ti	· · · · · · · · · · · · · · · · · · ·				-
Begin Date 19	968	Completi	on <u>1970</u>	<u> </u>	
Experimenter	General E	lectric Co.		<u> </u>	
Geographic Lo	cation <u>At</u>	lantic Ocean,	Pacific (ocean	
Satellite ID	ATS-1 & 3	_ Frequency _	C-Band	Mode _	<u>FŢ</u>
Category of E	kperiment _	Communication	ns/Support	b	
Experiment De	scription				
Portable commi ieveloped by (tter syst	ems,
The equipment umbrella anterchecked out fines. This equipment all Apollo the link during the l	nna and a ve rom the G.E. uipment or d o splashdown	ry-high-power parking lot uplicate has as; ATS-1 and	C-band to to the dec been used	ransmitte ck of a si subseque	r, was hip at ntly
The satellite was used through the obtained aliquolved.	ugh December	1975. Howev	er, no ini	formation	could
William Control					
Report Access	ion Nos.	1, 23			
User Form Nos	• None				
Similar Exper	iment Nos.	202			
Primary Keywo	rds: Commu	nications, Su	pport		
Secondary Key		to Shore, At		an. Pacif	lic Ocear
	Apol.	lo, Ship Term smitter			

Segin Date _		Com	pletion	April 1978	
xperimenter					
eographic L	•				
atellite ID				Mode	
ategory of	_		ications/Su	pport	
experiment D					
All launch so used this explone under Ex	periment	number. Pos	st-launch c	satellite o	apability s were
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		•	e de la companya de La companya de la co		
		Control of the Contro			
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		•			
	¥				
Report Acces	Sion Nos-	None			
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ser Form No:	s.	· · · · · · · · · · · · · · · · · · ·			
	riment No	202			
ITWITISE EXCE					

Experiment No. 183
Experiment Title <u>WEFAX</u> Begin Date Mar 1969 Completion Open
Experimenter NOAA
Geographic Location World
Satellite ID ATS-1 & 3 Frequency C-Band Mode WBDM
Category of Experiment Meteorology/Satellite Photos
Experiment Description
perform commanding and data gathering operation with both ATS-1 and 3. The spacecraft (S/C) are used approximately 14 hours per day to obtain spin scan weather pictures of the earth. ATS-1 is stationed over the Pacific Ocean at 149°W longitude and provides coverage of Hawaii, Alaska, and the western portion of the United States, while ATS-3 provides similar coverage of the Atlantic Ocean including western Europe and the eastern coast of the USA. The weather pictures are analyzed at Suitland, Md., and facsimile pictures are then transmitted via ATS-1 and 3 (at VHF) to several weather stations located in Europe, S. America, N. America, and the S. Pacific (as far west as Japan). The Spin Scan Cloud Camera (SSCC) weather pictures are used by stalent centers to follow hurricanes and tornados in near real time as well as providing valuable data for storm research (such as performed by Dr. T. Fujita, Prof. at the Univ. of Chicago and Verner E. Suomi, of the Univ. of Wisconsin).
Report Accession Nos. 130, 192
User Form Nos. None
Similar Experiment Nos.
Primary Keywords: Meteorology, Photography
Secondary Keywords: Clouds, National Oceanic and Atmospheric

Experiment	Title	VHF A/C		
Begin Date	January	1967	Completion	June 1970
Experimente	r ARINC			
Geographic	Location	U.S.		
Satellite 1	D ATS-1	c3 Fr	equency	Mode
Category of	Experime	nt Airc	raft Communi	cations
Experiment	Descripti	on		

1.

These experiments attempted to (1) determine the technical characteristics of an operational satellite VHF air/ground/air communications system designed for voice and data and to (2) verify that the application of satellites to the VHF aeronautical mobile environment is practicable within the state of the art existing in spacecraft and avionic equipment, especially aircraft SATCOM antennas. Satellite-relay communication trials were conducted with scheduled flights on oceanic routes under the typical environmental conditions, using for the first time an aircraft installation designed for the service. In this respect the tests provided the basis for an operational evaluation of the airborne system, the collection of additional scientific data and a demonstration to the aircraft crews and airline officials of the potential service possibilities of an eventual operational system. ARINC acted as the coordinating agency for the airline industry and the supporting organizations' test activities and was responsible for providing experimental data to NASA.

Report Accession Nos.	13,	28,	174,	176,	240, 294,	295	
	· .						
User Form Nos. None							
Similar Experiment No	s2	81,	657,	664			
Primary Keywords: A:	rcraft	Con	muni	cation	ns, SATCOM	Antennas	
Secondary Keywords:	Antenn	na Pa	atter	n, Si	gnal Streng	gth, VHF,	ATS

Experiment No. 202
Experiment Title Spacecraft Support
Begin Date April 1969 Completion January 1978
Experimenter NASA
Geographic Location Western Hemisphere
Satellite ID ATS-1 Frequency VHF Mode
Category of Experiment Communications/Support
Experiment Description
NASA determined that a VHF satellite duplex voice link could be maintained from the continental United States to the Apollo recovery forces in mid-facific. A transportable transmit and receive station was placed aboard the prime recovery aircraft carrier, and a duplex circuit with companders and multiplexed order-wire were established between the ship and an ATS ground station.
Report Accession Nos. 1, 23
User Form Nos. None
Similar Experiment Nos. 107, 108
Primary Keywords: Communications, Apollo
and the second of the second o

Experiment No. 205		A
Experiment Title <u>sscc</u>		### ### ##############################
Begin Date Mar 1969 Completion O	pen	
Experimenter NOAA		
Geographic Location World		•
Satellite ID ATS-1 & 3 Frequency <u>C-Ban</u>	d Mode _	WEDM
Category of Experiment Meteorology/Satell1	te Photos	
Experiment Description		
NOAA uses its own ground station (Wallops I perform commanding and data gathering opera and 3. The spacecraft are used approximate obtain spin scan weather pictures of the ea over the Pacific Ocean at 149°W longitude a of Hawaii, Alaska, and the western portion including western Europe and the eastern co	tions with bot ly 14 hours pe rth. ATS-1 is nd provides co of the United	th ATS-1 or day to s stationed overage States,
The weather pictures are analyzed at Suitla pictures are then transmitted via ATS-1 and weather stations located in Europe, S. Amer the S. Pacific (as far west as Japan).	3 (at VHF) to	several
The Spin Scan Cloud Camera (SSCC) weather p storm alert centers to follow hurricanes an real time, as well as providing valuable da (such as performed by Dr. T. Fujita, Prof. and Verner E. Suomi, of the Univ. of Wiscon	d tornados in ta for storm r at the Univ. o	near esearch
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Report Accession Nos. 69, 70, 107, 109		
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User Form Nos. 011, 046, 049		
Similar Experiment Nos. 210, 211		
		a da antario de la constante
Primary Keywords: Meteorology, Photography		
Secondary Keywords: Spin-Scan Camera, Cloud Cloud Motion, Storms, H		nados,

	Mar 1969 Completion January 1976
Experimenter	NOAA
Geographic L	ocation World
Satellite ID	ATS-1 & 3 Frequency C-Band & VHF Mode WBDM
Category of	Experiment Meteorology/Satellite Photos
Experiment D	escription
perform comm 3. The spacespin scan we over the Pace of Hawaii, A while ATS-3	s own ground station (Wallops Island, Virginia) to and and data gathering operation with both ATS-1 and ecraft are used approximately 14 hours per day to obtai ather pictures of the earth. ATS-1 is stationed ific Ocean at 149°W longitude and provides coverage laska, and the western portion of the United States, provides similar coverage of the Atlantic Ocean stern Europe and the eastern coast of the USA.
pictures are weather stat	pictures are analyzed at Suitland, Md., and facsimile then transmitted via ATS-1 and 3 (at VHF) to several ions located in Europe, S. America, N. America, and ic (as far west as Japan).
	centers to follow hurricanes and tornados in near real 1 as providing valuable data for storm research (such
as performed	by Dr. T. Fujita, Prof. at the Univ. of Chicago and comi, of the Univ. of Wisconsin.
as performed	by Dr. T. Fujita, Prof. at the Univ. of Chicago and
as performed	by Dr. T. Fujita, Prof. at the Univ. of Chicago and
as performed	by Dr. T. Fujita, Prof. at the Univ. of Chicago and
as performed	by Dr. T. Fujita, Prof. at the Univ. of Chicago and
as performed Verner E. Su	by Dr. T. Fujita, Prof. at the Univ. of Chicago and
as performed Verner E. Su Report Acces	by Dr. T. Fujita, Prof. at the Univ. of Chicago and omi, of the Univ. of Wisconsin.
as performed Verner E. Su Report Acces	by Dr. T. Fujita, Prof. at the Univ. of Chicago and lomi, of the Univ. of Wisconsin. sion Nos. 69, 70, 107, 109 s. 011, 046, 049
as performed Verner E. Su Report Acces User Form No	by Dr. T. Fujita, Prof. at the Univ. of Chicago and comi, of the Univ. of Wisconsin. sion Nos. 69, 70, 107, 109 s. 011, 046, 049 riment Nos. 205, 211

Experiment No. 211				
Experiment Title				
Begin Date November		etion 19	72	-
Experimenter NOAA				
Geographic Location				
Satellite ID ATS 3			Mode _	
Category of Experime	nt Meteorolo	gy/Satellite	Photos	
Experiment Descripti	on			
the scientific commu and its environment. to demonstrate and d dissector camera (ID for a protective shu dissector tube when contained the image sensor, the electron operation with space enable earth viewing the ground.	However, its iscover any unk (IDC). The (IDC) tter that close the camera was dissector, a suics necessary to craft spin, and	prime technicown limitate operation was dover the form operation of the form o	cal object cions of the selectron ace of the g. The ca spin rate coper phas	ive was e image ic except image mera , a nutation iming and ing to
motion. This system ground station compl future space applica	provided reliaexity and has stions.	ble service shown excelle	with a min ent potenti	imum of al for
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			All	
Report Accession Nos	. 765		N. Control of the con	
			•	
User Form Nos. Non	e			
Similar Experiment N	os. <u>205, 210</u>			
Secondary Keywords:	teorology, Sate	, Camera, Cl	louds, Nati	onal Oceanic
	•	Administrat		

Experiment No. 225	
Experiment Title VHF England	
Begin Date Aug 70 Co	mpletion Dec 70
Experimenter United Kingdom	
Geographic Location Atlantic C	cean, United Kingdom (England)
Satellite ID ATS-3 Frequ	
Category of Experiment Maritim	e Communications
Experiment Description	$z = C_0$
speech, teleprinter, facsimile using ATS-3. The tests were ca CAUSEWAY, the Post Office Coast	om Post Office performed tests of and selective calling transmission rried out between the SS ATLANTIC radio station at Burham-on-the-tation. Both FM and double side-ues were used.
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	and the second s
Report Accession Nos. 1. 28. 3	3
User Form Nos. 028, 045	
Similar Experiment Nos.	
Primary Reywords: Maritime Com	munication, Voice Communication
	acsimile, Ship to Shore, Ships, ean, United Kingdom, England,

Experiment Title VHF Netherland Begin Date Aug 70 Completion Feb 71 Experimenter Netherlands Geographic Location Atlantic Ocean, Netherlands Satellite ID ATS-3 Frequency VHF Mode N/A Category of Experiment Maritime Communications Experiment Description VHF communications tests via the ATS-3 satellite were performed from August, 1970, until February, 1971, between two ships, the SS "Nieuw Amsterdam" and the SS "Atlantic Crown", and NASA earth station Mojave and an experimental earth station located in Kootwijk, Netherlands. During the tests the Nieuw Amsterdam was partly operating between Rotterdam and New York and partly between New York and the Caribbean Sea; the Atlantic Crown was operating between Rotterdam and New York. The tests performed included measuring the performance characteristics of radio-teletype (multichannel FSK),
Geographic Location Atlantic Ocean, Netherlands Satellite ID ATS-3 Frequency VHF Mode N/A Category of Experiment Maritime Communications Experiment Description VHF communications tests via the ATS-3 satellite were performed from August, 1970, until February, 1971, between two ships, the SS "Nieuw Amsterdam" and the SS "Atlantic Crown", and NASA earth station Mojave and an experimental earth station located in Kootwijk, Netherlands. During the tests the Nieuw Amsterdam was partly operating between Rotterdam and New York and partly between New York and the Caribbean Sea; the Atlantic Crown was operating between Rotterdam and New York. The tests performed included measuring the per-
Geographic Location Atlantic Ocean, Netherlands Satellite ID ATS-3 Frequency VHF Mode N/A Category of Experiment Maritime Communications Experiment Description VHF communications tests via the ATS-3 satellite were performed from August, 1970, until February, 1971, between two ships, the SS "Nieuw Amsterdam" and the SS "Atlantic Crown", and NASA earth station Mojave and an experimental earth station located in Kootwijk, Netherlands. During the tests the Nieuw Amsterdam was partly operating between Rotterdam and New York and partly between New York and the Caribbean Sea; the Atlantic Crown was operating between Rotterdam and New York. The tests performed included measuring the per-
Category of Experiment Maritime Communications Experiment Description VHF communications tests via the ATS-3 satellite were performed from August, 1970, until February, 1971, between two ships, the SS "Nieuw Amsterdam" and the SS "Atlantic Crown", and NASA earth station Mojave and an experimental earth station located in Kootwijk, Netherlands. During the tests the Nieuw Amsterdam was partly operating between Rotterdam and New York and partly between New York and the Caribbean Sea; the Atlantic Crown was operating between Rotterdam and New York. The tests performed included measuring the per-
Category of Experiment Maritime Communications Experiment Description VHF communications tests via the ATS-3 satellite were performed from August, 1970, until February, 1971, between two ships, the SS "Nieuw Amsterdam" and the SS "Atlantic Crown", and NASA earth station Mojave and an experimental earth station located in Kootwijk, Netherlands. During the tests the Nieuw Amsterdam was partly operating between Rotterdam and New York and partly between New York and the Caribbean Sea; the Atlantic Crown was operating between Rotterdam and New York. The tests performed included measuring the per-
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VHF communications tests via the ATS-3 satellite were performed from August, 1970, until February, 1971, between two ships, the SS "Nieuw Amsterdam" and the SS "Atlantic Crown", and NASA earth station Mojave and an experimental earth station located in Kootwijk, Netherlands. During the tests the Nieuw Amsterdam was partly operating between Rotterdam and New York and partly between New York and the Caribbean Sea; the Atlantic Crown was operating between Rotterdam and New York. The tests performed included measuring the per-
from August, 1970, until February, 1971, between two ships, the SS "Nieuw Amsterdam" and the SS "Atlantic Crown", and NASA earth station Mojave and an experimental earth station located in Kootwijk, Netherlands. During the tests the Nieuw Amsterdam was partly operating between Rotterdam and New York and partly between New York and the Caribbean Sea; the Atlantic Crown was operating between Rotterdam and New York. The tests performed included measuring the per-
Rotterdam and New York and partly between New York and the Caribbean Sea; the Atlantic Crown was operating between Rotterdam and New York. The tests performed included measuring the per-
voice communications, selcal and facsimile transmissions (narrow-band FM and SSB) between an earth station and a ship and vice versa.
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Report Accession Nos. 48, 264
User Form Nos. None
Similar Experiment Nos.
Primary Keywords: Maritime Communication, Voice Communication
Secondary Keywords: Atlantic Ocean, Netherlands, Ships, SS Nieuw Amsterdam, SS Atlantic Crown, Teletype, Facsimile, Ship to Shore

Experiment No. 227
Experiment Title HET - VHF Alaska
Begin Date Jun 1969 Completion Open
Experimenter State of Alaska
Geographic Location Alaska
Satellite ID ATS-1 Frequency VHF Mode N/A
Category of Experiment Education/Communication/Health Services/
Experiment Description Data Transmission
The Alaskan experiment has two segments: Medical and Educational
The Medical Experiment is to evaluate a system of medical care delivered by satellite. A doctor in the regional center contacts village health aides via satellite radio on a scheduled basis. During contact periods, the health aides describe symptoms and conditions of persons with possible health problems. The doctor evaluates the descriptions and prescribes treatment and care procedures.
The Education Programs include information exchanges between communities, discussions of matter of interest to Alaska natives and school programs which include regularly scheduled teacher conferences. These conferences enable teachers in remote schools to exchange information and discuss educational and administrative matters.
Another experimental program in which Alaska is a participant, is the Pan Pacific Seminar. The principal investigator in this experiment is the National Education Association. This program is a monthly conference of educators in Alaska, Hawaii, the Appalachian states, and 9 South Pacific Islands. Two to four Alaska sites usually participate in these programs. An achieved technical goal of this experiment has been the use of double-hopping through ATS-1 and ATS-3 to provide communications between the Eastern United States, Alaska, and the South Pacific.
Report Accession Nos. 34, 49, 52, 61, 128, 148, 276, 286, 508
511, 572, 573, 579, 690, 751
User Form Nos. 044
Similar Experiment Nos.
Primary Keywords: Education, Communications, Health Services
Secondary Keywords: Primary Education, Teacher Education, Medical Education, Adult Education, Alaska, Medical Communications, Consultation, Telemedicine, Conferences, Teleconferencing, Teleconsultation, Telediagnosis System, Medical Records, Libraries, Indian Health Service, Telecommunication, Data Transmission, Information Systems

Experiment No. 228
Experiment Title
Begin Date 2/69 Completion 8/71
Experimenter GSFC/ONR - General Electric Co
Geographic Location Bermuda
Satellite ID ATS-1 & 3 Frequency VHF Mode
Category of Experiment Data Transmission/Buoy Interrogation
Experiment Description
Sea Robin was a joint NASA/Navy ONR/General Electric Co. experiment in which:
The buoy was interrogated with its individual address through the satellite and it responded with a verification of its address, a signal from which its location could be determined, and a readout of its sensor data in digital form. Under best signal conditions of the experiment, the digital error rate was 10 at 2.4414 kbs. Extrapolation from the 2.4414 kbs rate based on laboratory tests with random noise interference, suggests bit error rates at 305 b/s will be as low as 10^{-9} .
Line-of-position measurements ±1 nautical mile, 1 sigma of the latitude of the buoy mooring were accomplished with an RF transmission energy of less than 50 watt-seconds per measurement. Largest deviations of any of the 759 determinations were 3.25 nautical miles north and 2.75 nautical miles south of the mooring latitude.
Equipment on the buoy consisted of a small mobile radio- receiver, a solid-state RF power amplifier of 120 watts output, and a solid state "tone-code" ranging responder.
In a later extension of this experiment, VHF tone ranging was used to determine the location of a mobile terminal aboard the USS Vanguard. Simultaneous ranging to ATS-1 and 3 was performed, as well as single spacecraft ranging.
Report Accession Nos. 23
User Form Nos. None
Similar Experiment Nos. 233, 234
Primary Keywords: Data Transmission, Buoys
Secondary Keywords: Goddard Space Flight Center (GSFC), National Aeronautics and Space Administration (NASA), Bermuda, Tone Ranging, General Electric, Sea Robin

Experiment Title VHF	Barium Ton Experiment
Begin Date 3/71	Completion 9/71
	llops & Max Planck Institute
Geographic Location	NC. Peru. Chile, Canada
Satellite ID ATS-3	Frequency Center Mode -
Category of Experiment	Communications/Support
Experiment Description	
Island to Arequipa, Peru Janada, via Rosman Groun	VHF communication support from Wallops is LaSerena, Chile, and Great Whale, and Station. Operations started in March was launched and the test successfully 1971.
study the broad features outer radiation belt by	SA/MPE Barium Ion Cloud project is to s of electric and magnetic fields in the optical investigation of the behavior eleased at several earth radii altitude.
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on which the cloud is re Canada, and Byrd Station	ed at the base of the magnetic field line eleased (Great Whale Geophysical Station, a, Antarctica) combined with data from experiments.
on which the cloud is re Canada, and Byrd Station	eleased (Great Whale Geophysical Station, Antarctica) combined with data from
on which the cloud is re Canada, and Byrd Station	eleased (Great Whale Geophysical Station, Antarctica) combined with data from
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on which the cloud is re Canada, and Byrd Station	eleased (Great Whale Geophysical Station, Antarctica) combined with data from
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on which the cloud is re Canada, and Byrd Station	eleased (Great Whale Geophysical Station, Antarctica) combined with data from
on which the cloud is recanada, and Byrd Station geophysical satellites e	eleased (Great Whale Geophysical Station, a, Antarctica) combined with data from experiments.
Report Accession Nos. User Form Nos. None	eleased (Great Whale Geophysical Station, a, Antarctica) combined with data from experiments.
on which the cloud is recanada, and Byrd Station geophysical satellites e	eleased (Great Whale Geophysical Station, a, Antarctica) combined with data from experiments.
Report Accession Nos. User Form Nos. Similar Experiment Nos.	eleased (Great Whale Geophysical Station, Antarctica) combined with data from experiments. None
Report Accession Nos. User Form Nos. Similar Experiment Nos. Primary Keywords: Com	eleased (Great Whale Geophysical Station, a, Antarctica) combined with data from experiments.

Begin Date 9/70		brecrou	2/71		
Experimenter MSFN Networ					
Geographic Location <u>Wes</u>		-		Mode	
Satellite ID ATS-3	-			_ MOCLE	
Category of Experiment	Data T	<u>cansmis</u>	sion		
Experiment Description VHF propagation studies w ROSMAN or MOJAVE transmit MSFN Canary and Ascension data. The test was run f to cover 24 hours of prop	ted a to receive or 4 hor	est signed : ad and : urs per	nal and Ro recorded	OSMAN, Dropaga	MOJAVE,
Report Accession NosN	one				
User Form Nos. None	283				

Experiment No. 232
Experiment Title VHF EG&G
Begin Date 1968 Completion 1972
Experimenter EGEG, Los Alamos Scientific Laboratories
Geographic Location Western Hemisphere
Satellite ID ATS-1 Frequency Mode
Category of Experiment Aircraft Communications
Experiment Description
The September 1971 Conjugate Auroral Measurements Studies (and those of 1968 and 1970) were conducted by the Los Alamos Scientific Laboratories (LASL), with support from EG&G. The program used two Air Force Systems Command NC-135 aircraft that were based at Kirtland AFB, New Mexico. Aircraft No. 60-370 would depart from Elmendorf Air Force Base, Anchorage, Alaska, fly to its initial conjugate point, then proceed north along a prescribed conjugate point flight path for approximately three hours. Aircraft No. 60-369 would depart from Christchurch, New Zealand, to reach its conjugate point flight path coincident with the northern aircraft. The aircraft would maintain geomagnetic conjugacy according to the mission profile by communicating with each other via satellite. The importance of the satellite communications system stemmed from this need for the maintenance of bi-hemispheric spatial and temporal conjugacy, and from the need for later coordination in order to compare system parameters and live auroral data.
In addition to the airborne systems, a ground station was established at Kirtland AFB, New Mexico. The intent of this ground station was to assist in relaying positional information should aircraft-to-aircraft communications not be achieved. The ground station would also act as a "home base" contact for the transfer of information, messages, and other pertinent data. The University of Alaska gave program personnel permission to use
its ground station at College, Alaska, to supplement the Kirtland- based station.
en e
Report Accession Nos. 1, 20, 21
User Form Nos. None
Similar Experiment Nos. 281
Primary Keywords: Aircraft Communications, Da smission
Secondary Keywords: Voice Communication, Conjug e Auroral Measurements

Experiment No. 233	
Experiment Title VHF Norway	
Begin Date 11/70 Completion 2/71	
Experimenter Norwegian Council for Scientific & Industrial Rese	a :
Geographic Location Norway	
Satellite ID ATS-3 Frequency VHF Mode -	
Category of Experiment Data Transmission/Buoy Interrogation	
Experiment Description In this experiment, the Norwegian Institute of Meteorology used	
the ATS-3 to relay meteorological and oceanographic data from an instrumented buoy (SCOMB-1) to Oslo, Norway. Buoy data were in a PCM format and include meteorological, housekeeping, and positi information. The elevation angle from the buoy to the satellite was approximately 9° and from the ground stations 7°. Data were successfully transmitted from the buoy to Oslo. Command transmissions from ground station to buoy were marginal at best.	OI
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Report Accession Nos. 28, 29, 247	
User Form Nos. None	
Similar Experiment Nos. 228	
Primary Keywords: Meteorology, Data Transmission	

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Experiment No. 234
Experiment TitleGE/FAA
Begin Date November 1969 Completion June 1971
Experimenter General Electric Co.
Geographic Location North Atlantic
Satellite ID ATS-1&3 Frequency Mode
Category of Experiment Ranging and Position Fixing
Experiment Description Ranging and position fixing tests were conducted during this period
using ground reference transponders at Gander, Newfoundland and Schenectady, New York. Position fixing for an aircraft in flight over a short period of time was demonstrated on the first leg of a North Atlantic test flight. A DC-6 aircraft of the Federal Aviati Administration was tracked by two-satellite ranging and also by precision radar as it flew from Atlantic City enroute to Rome, New York. Sixty-three of seventy-nine satellite fixes agreed with the radar fixes within one nautical mile. When the aircraft was on the ground at Rome, five satellite fixes were within 2400 and 5400 feet of the tower in a direction between east-southeast and south-southeast. It was later determined that the aircraft was on a taxiway approximately 3500 feet southeast of the tower when the fixes were made. Long-time accuracy for a transponder aboard a ship was tested with a unit on the Coast Guard Cutter Rush. The equipment time delay of the ship-borne unit was calibrated when the ship was underway in the Bay of Farallons, California on May 5. On May 10 a fix was made when the ship was docked at Alameda Naval Station and was correct within a fraction of a nautical mile. Tests continued until July 10 when the ship returned to San Francisco.
Report Accession Nos. 116
Jser Form Nos. None
Similar Experiment Nos. 228
Primary Keywords: Ranging, Position Fixing

Secondary Keywords: Precision Radar, Aircraft, Ship

Experiment Ti	-						
Begin Date _			_	*			
Experimenter					· · · · · · · · · · · · · · · · · · ·	f Haw	aii
Geographic Lo							
Satellite ID	,					Mode _	
Category of E	xperime	nt Educat	ion/Hea	1th Ser	cvices/C	ommun:	ications
Experiment De	scripti	on Data 1	LGUSMIS	1011			
The Pan Pacif: Satellite (PE experiment in The purpose of of communications especially for	ACESAT) volving f the pr ion tech	Project i instituti oject is nology an	s an in ons in to expe d new m	ternati twelve riment ethods	ional ed Pacific with th of oper	ucation Basing	on n nation Lication designe
The experiment taking of demonstrated planning with is assembled a way voice com- are geared to	onstrati in a col and shar municati	ons, equi laboratived by man on. Expe	pment d e envir y users riments	evelopm conment . The are in	ment, an in which focus in tiated	d long h expense s on the	g-range ertise two- sers and
e responsive	to soci	al functi	ons.		TTCII CAC		,,
oe responsive	to soci	al functi	ons.				
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Report Access	to soci	. 12, 66	ons.				
Report Access	ion Nos	. 12, 66	, 120,	206, 2			
Report Access 219, 311, 577 User Form Nos	ion Nos	. 12, 66 49, 912 056, 057	, 120,	206, 2			
Report Access 219, 311, 577 User Form Nos Similar Exper	ion Nos	. 12, 66 49, 912 056, 057	, 120,	206, 2			
Report Access 219, 311, 577 User Form Nos	ion Nos	. 12, 66 49, 912 056, 057	, 120,	206, 23	10, 212,	217,	218,

Experiment No. 236	
Experiment Title VHF Brazil	
Begin Date 2/70	
Experimenter Stanford Univers	ity/CNAE, Brazil
Geographic Location Western H	
Satellite ID ATS-3 Free	quency VHF Mode -
Category of ExperimentEduca	tion
Experiment Description	
transmission of a regularly so Stanford Univ. to Comisso Naci (CNAE) in Brazil. Tests will effectiveness of learning in a on the instructor and class in of the synchronous satellite to noise levels will be evaluated computer links will be establite demonstrate the ability to to operate simple teletype terinstruction programs.	onal de Atiridades Espaciais be conducted to estimate the remote classroom and the effect the live classroom. Efforts ime delay and of a range of during the lectures. Two way ished through the satellite transfer blocks of data and minals remotely, computer aided n May 1970 and initial equipment
that the experiment will revea in organizing a future permane	rly Spring 1972. CNAE anticipates 1 the types of problems inherent nt service and that it will form 1 for experiments using ATS F&G.
Report Accession Nos. 25. 13	• • • • • • • • • • • • • • • • • • •
User Form Nos. None	
Similar Experiment Nos.	
Primary Keywords: Education	
Secondary Keywords: Brazil, S Hemisphere	tanford University, Western

Experiment No. 238
Experiment Title VHF NBS
Begin Date Aug 71 Completion Aug 72
Experimenter National Bureau of Standards
Geographic Location North and South America
Satellite ID ATS-3 Frequency VHF Mode N/A
Category of Experiment Time & Frequency Dissemination
Experiment Description
The National Bureau of Standards employed the ATS-3 satellite to relay a frequency and time format similar to that of WWV and WWVH (NBS standard time and frequency stations). The satellite relayed voice announcements of the time of day, ticks every second, audio-frequency tones, and a digital time code. Broadcasts occured at 1700 to 1715 and 2330 to 2345 GMT (Graenwhich Mean Time). The two 15-minute broadcast periods occured Monday through Friday, excluding holidays.
Specially equipped sites in South and North America gathered data from the satellite broadcasts which were used to determine the potential accuracy of the time signals.
and the state of the
Report Accession Nos. 19, 47, 285, 617
User Form Nos. 014
Similar Experiment Nos.
Primary Keywords: Time Dissemination
Secondary Keywords: Time/Frequency Synchronization, National Bureau of Standards, Broadcasting

Experiment No	239			
Experiment Ti	ttle VHF Var	nguard		
Begin Date	1968	Completio	n 1975	
Experimenter	U.S.C.G.			
Geographic Lo	ocation Atla	antic and Paci	fic Oceans	
Satellite ID	ATS 1&3	Frequency	Mo	de
Category of E	xperiment	Voice and Dat	a Transmissio	n
Experiment De	escription	7		
between Coast	: Guard ships	and ground st	experiments ations. Late See Experimen	were conducted r experiments t 265.
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Report Access	ion Nos. 1	, 645, 664, 66	56	
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User Form Nos Similar Exper		265		
Primary Keywo			s, Data Transm	

Experiment No. 244
Experiment Title MMW Reg 1
Begin Date Aug 69 Completion Sept 71
Experimenter NASA
Geographic Location North Carolina, U.S.A., Canada
Satellite ID ATS-5 Frequency 31 65 GHZ also Mode N/A
Category of Experiment Millimeter Waves
Experiment Description
A Millimeter Wave Propagation Experiment using ATS-5 provided the first propagation measurements from an orbiting satellite in the Ku (12.5 to 18 GHz) and Ka (26.5 to 40 GHz) frequency bands. The objective of this experiment was to provide information on the propagation characteristics of the earth's atmosphere on this relatively unexplored portion of the electromagnetic spectrum.
The ATS-5 Millimeter Wave Experiment provided amplitude and phase measurements on two independent test links at 15.3 GHz (satellite-to-earth) and at 31.65 GHz (earth-to-satellite) during measured and defined meteorological conditions.
The test signal for both the uplink and downlink consisted of a carrier and two sidebands equally displaced on either side of the carrier. For the uplink, the sidebands could be set at one of the discrete values +1.0, +10 or +50 MHz from the 31.65 GHz carrier. For the downlink, the sidebands could be set to +0.1, +1.0, +10 or +50 MHz from the 15.3 GHz carrier.
Downlink measurements of carrier amplitude, upper and lower sideband amplitude, and relative sideband phase were recorded at the participating sites on magnetic tape and paper charts. Uplink measurements were performed onboard the satellite and telemetered to an ATS tracking station (Rosman, N.C.) for reduction and processing.
Report Access on Nos. 238, 513, 553, 595
User Form Nos. None
Similar Experiment Nos. 245, 608, 609, 638, 658
Primary Keywords: Millimeter Wave
Secondary Keywords: North Carolina, Meteorological Parameters,
Gamada Bronagation

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Experiment No. 245
Experiment Title MMW Reg 2
Begin Date Aug 69 Completion Sept 71
Experimenter NASA
Geographic Location North Carolina, U.S.A., Canada
Satellite ID ATS-5 Frequency 15.3 GHz Mode N/A
Category of Experiment Millimeter Waves
Experiment Description
A Millimeter Wave Propagation Experiment using ATS-5 provided the first propagation measurements from an orbiting satellite in the Ku (12.5 to 18 GHz) and Ka (26.5 to 40 GHz) frequency bands. The objective of this experiment was to provide information on the propagation characteristics of the earth's atmosphere on this relatively unexplored portion of the electromagnetic spectrum.
The ATS-5 Millimeter Wave Experiment provided amplitude and phase measurements on two independent test links at 15.3 GHz (satellite-to-earth) and at 31.65 GHz (earth-to-satellite) during measured and defined meteorological conditions.
The test signal for both the uplink and downlink consisted of a carrier and two sidebands equally displaced on either side of the carrier. For the uplink, the sidebands could be set at one of the discrete values +1.0, +10 or +50 MHz from the 31.65 GHz carrier. For the downlink, the sidebands could be set to +0.1, +1.0, +10 or +50 MHz from the 15.3 GHz carrier.
Downlink measurements of carrier amplitude, upper and lower sideband amplitude, and relative sideband phase were recorded at the participating sites on magnetic tape and paper charts. Uplink measurements were performed onboard the satellite and telemetered to an ATS tracking station (Rosman, N.C.) for reduction and processing.
Report Accession Nos. 238, 513, 553, 595
User Form Nos. None
Similar Experiment Nos. 244, 603, 609, 638, 658
Primary Keywords: Millimeter Wave
Secondary Keywords: North Carolina, Meteorological Parameters,

Experiment No. 246					
Experiment TitleSpread	i Spectrum Ran	dom Access (SSRA)		
Begin Date April 1971	Completion	on May 1971			
Experimenter Westinghor	use Electric C	o.			
Geographic Location Wes	st Coast				
Satellite ID ATS-5	_ Frequency	L&C Band I	Mode FT		
Category of Experiment _	Ranging & Pos	ition Fixing		 	
Experiment Description					
The SSRA technique utilize full 35 MHz spacecraft 1: the presence of the SSRA regular voice or TV use of where SSRA ranging, both two stations (ROSATS and at a level of -20 db and	ink. The C/No signal had ne of the spacecr one-way and t MOJATS). The	was well be egligible eff aft link. The curn around, a ranging was	low noise ect on ests were was betwee performed	level an performe	
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Report Accession Nos.	530				d.
User Form Nos. None					
Similar Experiment Nos.					
			· · · · · · · · · · · · · · · · · · ·		
Primary Keywords: Rangin	ng, Position E	rixing			***
Secondary Keywords: Wes	tinghouse Elec ccess	ctric Co., We	est Coast,		

Experiment No. 247	·
Experiment Title ALPHA-2	
Begin Date July 1970 Completion February 1971	, j
Experimenter USAF/Space & Missile Systems	
Geographic Location Atlantic Ocean, U.S.A.	
Satellite ID ATS-5 Frequency L & C Band Mode FT	
Category of Experiment Maritime Communication	}
Experiment Description	
The ATS-5 synchronous satellite, which is spinning, produces a return signal beam which sweeps across the Earth every 783 milliseconds. A signal reception window of approximately 50 milliseconds is available with each rotation. As a consequence of the satellite motion the L-band and C-band ranging data was required near simultaneously. To accomplish this the receiver continuously reacquired the satellite signal within a few milliseconds at the beginning of the burst and obtained ranging data at both L-band and C-band within the burst. The L-band ionospheric propagation delay variation was evaluated by comparing L-band and C-band range measurements. These tests were conducted for SAMSO by Applied Information Industries, Moorestown	
A receiver integrally connected with a computer-controlled data of system has been developed and demonstrated over the three-month to period. This receiver system is capable by means of maximum length PRN code modulation of producing fine grain L-band and C-band range measurements to the spinning ATS-5 during each illumination burst The performance characteristics enabled these measurements to be made under these burst conditions and with small doppler component present. The L-band ionospheric propagation delay data has been derived from the measurements made over several 24-hour test periods. The produce a trend which shows how atmospheric delay varies as a fun of local time. From the minimum in early morning to the maximum at mid-day, an equivalent range variation of 25 feet is indicated	esting th ge
Report Accession Nos. 2, 611, 989	
User Form Nos. 020	# 1
Similar Experiment Nos.	: ' :
and the second of the second o	
Primary Keywords: Maritime Communication	Property of the second
Secondary Keywords: L-Band, C-Band, Propagation, Ionosphere	Sales Developed

Experiment No. 248						
Experiment Title SP L-Band	-					
Begin Date August 1974 Completion April 1975						
Experimenter AII Systems	_					
Geographic Location U.S.						
Satellite ID ATS-5 Frequency Mode	-					
Category of Experiment Voice and Data Transmission	•					
Experiment Description						
The shore-based facilities for this experiment included Kings Po Earth Station and the Maritime Coordination Center located at the National Maritime Research Center, Kings Point, New York. In ada small c-band transmitting facility located at the NASA STADAN Rosman, North Carolina, were available to support the position of mination experiments involving the ATS-5 satellite.	dition, station,					
The shipboard satellite terminal communications equipment consist L-band transmitter, receiver and antenna subsystem capable of suffull-duplex voice, data and ranging communications. This fundamental configuration supports various experimental operations: A compute controlled automatic operational mode supported ranging (position determination), data or voice experimentation when utilizing the ranging/voice/data modem. This modem and a series of software to provided an automatic configuration for the exchange of data company offices, as well as the Maritime Coordination Center.	apporting nental ater- on e integrated casks muni-					
Report Accession Nos. None	•					
Hear Born Mag 004						
User Form Nos. 024 Similar Experiment Nos	•					
User Form Nos. 024 Similar Experiment Nos.	•					

Experiment No. 249
Experiment Title MARAD
Begin Date Mar 70 Completion Dec 71
Experimenter Applied Information Industries, Inc.
Geographic Location Atlantic Ocean, Arctic Ocean, Western Hemispher
Satellite ID ATS-3, 5 Frequency L & C Band Mode FT
Category of Experiment Maritime Communications/Ranging
Experiment Description
The Maritime Administration (MARAD) and AII Systems used ATS-3 & 5 for several experiments in maritime communication.
One took place during the SS Manhattan's Spring 1970 Arctic Voyage. L-Band signals relayed by synchronous satellite were successfully used for navigation and data communication. RF signals containing ranging modulation were transmitted from the NASA Mojave station, relayed through ATS-5, and received by two stations. (One of these stations was at AII Systems Laboratories in Moorestown, NJ, and the other was aboard the SS Manhattan.) This demonstrated the feasibility of position fixing by making range measurements between a fixed ground station, a satellite in a known position, and a moving platform on the earth's surface. Also notable was the simultaneous reception and transmission of data communications on the ranging signal.
Another experiment comprised four months (in 1971) of receiver modification, transmitter development, data buffer design and fabrication, and field testing of the new equipment. Using these developments, the first time signals from a low-power terminal were transmitted to the Mojave station via the ATS-5 satellite. Further equipment test and check-out led to the installation of this equipment on board the SS Baltimore. Two-way data communications testing was conducted between the ship and NASA Mojave station while the ship made the round trip voyage from Bayway, NJ to Baytown, TX.
During the above experiment, configuration and data reduction techniques were developed in parallel with the hardware modification tasks. Report Accession Nos. 2, 611, 665, 666
User Form Nos. 019, 021, 022
Similar Experiment Nos.
Primary Keywords: Maritime Communication, Ranging
Secondary Keywords: Ship Terminals, Ship to Shore, SS. Manhattan, Data Transmission, Voice Communication, L-Band, C-Band, MARAD, Atlantic Ocean, Arctic Ocean, Ranging

2-30

Experiment no. 250
Experiment Title L-Band Ranging
Begin Date February 1971 Completion May 1971
Experimenter Westinghouse Electric Co.
Geographic Location West Coast
Satellite ID ATS-1/3/5 Frequency VHF/C/L Band Mode FT & CXL
Category of Experiment Ranging & Position Fixing
Experiment Description
This experiment was designed to measure the range error due to the earth atmosphere, (ionosphere, stratosphere and troposphere) C-band ranging to the spacecraft was used as a reference to which L-band and VHF ranging were compared. Determining the diurnal, nocturnal and solstice effects on these range errors was an important phase of the program which was performed over two 24 hour periods as well as several overlapping 4 hour periods. The test was performed by simultaneously ranging at C-band and L-band, or C-band and VHF.
Report Accession Nos. 638
User Form Nos. None
Similar Experiment Nos. 246
Primary Keywords: Ranging; Position Fixing
Secondary Keywords: West Coast, Westinghouse Electric Co., Goddard Space Flight Center (GSFC), L-Band, C-Band

Experiment Title L-Band Dot Begin Date February 1971 Completion Apr	:il 1973
	:11 1973
Experimenter FAA/BOEING	
Geographic Location North America	
Satellite ID ATS-1&3 Frequency	Mode
Category of Experiment Ranging and Data Tra	ansmission
Experiment Description	
FAR and Boeing transmitted at L-band from an to the ATS-1, 3 & 5 spacecraft. The downlink at NAFEC. One day of data was collected in the 1972) when the spacecraft experienced a malfureceiver causing the experiment to be changed figuration, i.e., Rosman transmitted to the sand the downlink was received at the aircraft spacecraft was in the CXL mode). Both tone a were transponded by the spacecraft.	t (at L-band) was received this mode (28 April inction in the L-band to another conspacecraft at C-band, at L-band (the
The collected data consisted of multipath and The aircraft has several antennas; forward, so looking, so that several angles of reflected examined. CRC and MOT (Canada) participated recording downlink signals received at Ottawa Canada.	side, and down- signal could be in the test by
Report Accession Nos. 288, 556	
User Form Nos. 025, 026, 027	
Similar Experiment Nos. 252	enter ¹
Primary Keywords: Ranging, Data Transmission	
Secondary Keywords: North Atlantic, L-Band,	Multipath, Boeing.

Experiment No. 252
Experiment Title L-Band FAA
Begin Date April 1971 Completion April 1973
Experimenter FAA/Boeing
Geographic Location North America
Satellite ID ATS-1,3&5 Frequency C/L Band Mode CXL
Category of Experiment Ranging and Data Transmission
Experiment Description
to the ATS-1, 3 & 5 spacecraft. The downlink (at L-band) was received at NAFEC. One day of data was collected in this mode (28 April 1972) when the spacecraft experienced a malfunction in the L-band receiver causing the experiment to be changed to another configuration, i.e., Rosman transmitted to the spacecraft at C-band, and the downlink was received at the aircraft at L-band (the spacecraft was in the CXL mode). Both tone and P/N ranging signals were transponded by the spacecraft. The collected data consisted of multipath and ionospheric effects. The aircraft has several antennas; forward, side, and downlooking, so that several angles of reflected signal could be examined. CRC and MOT (Canada) participated in the test by
recording downlink signals received at Ottawa and Churchill, Canada.
Report Accession Nos. 288, 556
User Form Nos. 025, 026, 027
Similar Experiment Nos. 251
Primary Keywords: Ranging Data Transmission

Secondary Keywords: North Atlantic, L-Band, Multipath, Boeing, FAA, Voice Communication

Experiment N				بمتدنية متدادا			
Experiment T			-Long-Base	TIUG-INCO	FIGIOMOTE)	s (VLBI)	_
Begin Date _			•	ion <u>10/7</u>	2		
Experimenter	Cente	r for A	strophysic	s/GSFC			-
Geographic L	ocation	U.S.					_,
Satellite ID	ATS-1,	3, 5	Frequency	SHF	Mode	FT	-
Category of	Experime	ent <u>Ti</u>	me and Free	quency Di	sseminatio	n	_
Experiment D	escripti	Lon					
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Experiment No. 25	Submitted to the second of th
Experiment Title	SHF CRC
Begin Date <u>Januar</u>	ry 1971 Completion December 1971
ExperimenterCar	nadian Research Center
Geographic Location	on Canada
Satellite ID ATS-	-1 Frequency Mode
Category of Exper:	iment Wave Propagation
Experiment Descrip	
effects are more angles and are the State of Alaska.	dversely affects satellite communication links ation, absorption or path delay effects. These pronounced at high latitudes and low elevation herefore of great interest to Canada and the Applications most affected include ETV, tracking and data relay and traffic management.
at high latitudes a worst case was West Longitude (r The CRC requirement	onsisted of observing effects of SHF signals s and low elevation angles. By using ATS-1, tested, because the ATS-1 location at 150° near Hawaii) made it appear just above the horizents did not effect the ATS-1 operating schedule ided with this schedule and observed the signal s.
Report Accession N	
Report Accession N	Nos. 893
User Form Nos.	None
Report Accession Number Form Nos.	None

Experiment No. 258
Experiment Title SHF Search
Begin Date 12/71 Completion 12/71
Experimenter Public Systems Inc./Dept. of Justice
Geographic Location U.S.A/California
Satellite ID ATS-1 Frequency C-Band Mode FT
Category of Experiment Data Transmission/Facsimile Trans.
Experiment Description
Public Systems Inc. tested the feasibility of satellite communications for federal, state and local law enforcement. The experiment demonstrated the practicability of fingerprint transmission by satellite and tested parameter values necessary for adequate transmission. Facsimile, slow scan television, and high speed TTY (100 wpm) were transmitted.
Report Accession Nos. 14, 172, 280
User Form Nos. 010, 217
User Form Nos. 010, 017 Similar Experiment Nos.
Primary Keywords: Data Transmission, Facsimile
Secondary Keywords: Law Fingerprint SEADCH California

Experiment No. 259	
Experiment Title COMSAT	C/L Prop.
Begin Date <u>1/6/72</u>	Completion 4/30/72
Experimenter COMSAT La	abs
Geographic Location Wes	
Satellite ID ATS-5	Frequency C & L Band Mode WBDM-L-Band
Category of Experiment	Wave Propagation
Experiment Description	
fading, they requested A and recorded received si	signals (4 gHz) from an INTELSAT dzil Station. When they observed ATS-5 L and C-Band downlink signals ignal strengths. The data was analyzed acy dependence of the scintillation
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. $\hat{\hat{\mu}}^{(3)}$	
Report Accession Nos.	None
User Form Nos. None	
Similar Experiment Nos.	
Primary Keywords: Commu	unications
	SAT, Western Hemisphere, Brazil,

Experiment No. 260
Experiment Title CRC L-Band
Begin Date 9/71 Completion 5/72
Experimenter Comm Research Center/Ministry of Transport
Geographic Location Canada
Satellite ID ATS-5 Frequency C&L Band Mode CXL, WBDM
Category of Experiment Millimeter Waves
Experiment Description
CRC and MOT utilized the L-band downlink of ATS-5 to determine propagation and multipath effects. The MOT antenna was located at Ft. Churchill, Manstaba, Canada, the CRC antenna was located at Ottawa. The MOT test used 8 and 10 KHz tones to determine propagation effects, CRC used tones as well as P/N sequences to determine multipath effects.
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Report Accession Nos. 309
User Form Nos. 009
Similar Experiment Nos.
Primary Keywords: Millimeter Wave
Secondary Keywords: IBand Canada

Experiment No. 261
Experiment Title GE L-Band
Begin Date March 1971 Completion December 1973
Experimenter General Electric Co.
Geographic Location North America
Satellite ID ATS-1,3&5 Frequency Mode
Category of Experiment Ranging and Position Fixing
Experiment Description
Factors that affect communications reliability and position fixing accuracy were measured and evaluated in the experimental program between 1968 and 1973. Automatic transponders were carried on ships in the Atlantic, Pacific and Gulf of Mexico and on the Mississippi River; on jet and propeller driven aircraft flying over the continental United States and North Atlantic to Shannon, Ireland and Thule, Greenland; on a buoy moored in deep water off Bermuda; and in a panel truck driven over country roads in upstate New York. Automatic transponders at Shannon, Ireland; Reykjavik, Iceland; Schenectady, New York; Kings Point, New York; Seattle, Washington; and Buenos Aires, Argentina were used to test a trilateration technique for real-time satellite location and to measure propagation and other factors that affect communication reliability and ranging accuracy.
The tone-code ranging technique provided a precision of approximately 0.1 nmi. at mid-latitude with one range measurement at L-band, one at VHF using signalling characteristics and parameters that are compatible with communications.
The ranging technique is digital and compatible with communications. Ranging signals are so short in duration that they could be inserted in pauses in speech communications. Extrapolations from the cost of experimental equipments show that it will cost only a modest sum to add circuits for position fixing to the satellite communications equipment for a ship or aircraft.
Report Accession Nos. 37, 236, 569, 234, 640
User Form Nos.
Similar Experiment Nos.
Primary Keywords: Ranging, Position Fixing
Secondary Keywords: ATS-5, L-Band, VHF, Tone-Code

Experiment	No. <u>263</u>					
Experiment	Title TELE					
Begin Date	9/72	Cor	mpletion _	9/72		
Experimente	er <u>Telesat</u>	Canada				
Geographic	Location C	anada				
Satellite 1	ID ATS-1	Freque	ency	Me	ode	
Category of	Experiment	Broadcas	ting			
Experiment	Description		******	`` ``\	;	0
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Report Acco	ession Nos	31, 144				· · · · · · · · · · · · · · · · · · ·
User Form	Nos. 015					
	periment Nos.		•			
Primary Key	ywords: Broad	casting				
Secondary	-	icas cing				
Antenna Canada Telesat		1000 (1000) 1000 (1000) 1000 (1000)	2-40			

Experiment No. 264
Experiment Title MARAD/AII/PLACE
Begin Date 1/73 Completion Open
Experimenter AII/MARAD
Geographic Location Atlantic/Pacific
Satellite ID ATS-3,5 Frequency C-band Mode FT
Category of Experiment Maritime Communications
Experiment Description
The AII and MARAD experimented with various satellite communications equipment on various ships, and on shore. Equipment tested included AII, Magnovox, and COMSAT data/voice modems and the AII ranging/data modem.
The shore-based facilities included Kings Point Earth Station and the Maritime Coordination Center located at the National Maritime Research Center, Kings Point, New York. In addition, a small C-band transmitting facility located at the NASA STADAN station, Rosman, North Carolina, was available to support the position determination experiments involving the ATS-5 satellite.
The shipboard satellite terminal communications equipment consisted of an L-band transmitter, receiver and antenna subsystem capable of supporting full-duplex voice, data and ranging communications. This fundamental configuration supported various experimental operations. A computer-controlled automatic operational mode supported ranging (position determination) and data or voice experimentation when utilizing the integrated ranging/voice/ data modem. This modem and a series of software tasks provided an automatic configuration for the exchange of data communications [messages between the ships and their respective shipping company offices,] as well as the Maritime Coordination Center. Ranging and/or position determination experiments and voice communications experiments can be conducted simultaneously if desired.
Ninety-three test periods were conducted from August 1974 to April 1975. The total operating time was 407 hours, of which 277 hours were considered useful.
Report Accession Nos. 645, 665, 666
REPORT ACCESSION NOS.
Han Born No.
User Form Nos. 023, 051
Similar Experiment Nos. 249
Primary Keywords: Maritime Communication, Data Transmission
Secondary Keywords: Atlantic Ocean, Pacific Ocean, MARAD, Teletype, Facsimile

Experiment No. 265
Experiment Title Vanguard
Begin Date March 1972 Completion April 1973
Experimenter U.S.C.G.
Geographic Location Southern Atlantic and Pacific Oceans
Satellite ID ATS-3&5 Frequency Mode
Category of Experiment Voice and Data Transmission/Position Fixing
Experiment Description
Vanguard was an experiment to evaulate the NASA-Goddard position location and aircraft communications equipment (PLACE), at C band (4/6GHz), using NASA's ship, the USNS Vanguard, and the ATS 3 and ATS 5 synchronous satellites. The Sea Test phase, extending from March 29, 1973 to April 15, 1973 was successfully completed; the principal objectives of the experiment were achieved. Position location and voice-quality measurements were excellent; ship position was determined within 2 nmi; high-quality, 2-way voice transmissions resulted as determined from audience participation, intelligibility and articulation-index analysis. A C band/L band satellite trilateration experiment was also performed.
Report Accession Nos. 645, 666
User Form Nos. None
Similar Experiment Nos. 239, 264, 605, 657
Primary Keywords: Ranging, Voice Communication
Secondary Keywords: PLACE, C-band, L-band, Vanguard

Experiment No. 268
Experiment Title L-Band Trilat
Begin Date January 1974 Completion January 1976
Experimenter General Electric Co.
Geographic Location U.S.
Satellite ID ATS-5 Frequency Mode Category of Experiment Position Fixing
Experiment Description
An L-band trilateration network has been developed which locates the ATS-5 satellite in near real-time and provides short term position predictions. A location precision of 0.0002° in latitude and longitude and 20 meters in earth center distance has been achieved. The accuracy of position fixes is estimated at 0.0005° latitude and longitude and 50 meters earth center distance. On every range measurement, self calibration circuits in the two automatic remote transponders return to the master ground station a measurement of the time delay experienced by the ranging signal as it passes through the transponder, thus eliminating a major source of uncertainty in slant range accuracy.
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Report Accession Nos. 235, 646
User Form Nos. None
Similar Experiment Nos.
Primary Keywords: Trilateration, L-Band
Secondary Keywords: Accuracy, C-Band, Ranging, Satellite

Experiment No. 281
Experiment Title Los Alamos Lab Auroral Experiment
Begin Date 10/70 Completion 10/71
Experimenter EG & G
Geographic Location Western Hemisphere
Satellite ID ATS-1 Frequency VHF Mode N/A
Category of Experiment Aircraft Communications
Experiment Description
support for 2 aircraft operating at opposite ends of magnetic field lines during Auroral studies. One aircraft operated out of Christchurch, New Zealand. The other from College, Alaska. The ground control station was located at Albuquerque, N.M. The experiments were successfully carried out in October, November 1970, and 16 August through 2 September 1971. Los Alamos Laboratories' fall rocket program in the Pacific Ocean [Operation Pisaposte] also used ATS-1 to fulfill communications requirements. The ATS-1 Satellite was the primary communications link for ground-to-ground and prelaunch coordination and for passing vector information between airborne instrumentation stations, ground stations and launch sites.
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Report Accession Nos. 1, 20, 21,
User Form Nos. None
Similar Experiment Nos. 232
Primary Keywords: Aircraft Communications, Data Transmission Secondary Keywords: Western Hemisphere, Voice Communication

Experimenter	Lister	Hill Natio	onal Cent	er for Bior	edical	Communication
Geographic L						
Satellite In	ATS-1	Frequ	ency VH	<u> </u>	ode Du	plex
Category of	Experimen	t <u>Health</u>	Services		والمراجات والمراجات	
Experiment D	7					
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Experiment No. 283	
Experiment Title VHF/UCLA	
Segin Date 9/71 Completion 10/71	
Experimenter UCLA/TRW Systems	
Geographic Location <u>California/Colorado</u>	
Satellite ID ATS-3 Frequency SHF/VHF Mode N/A	
Category of Experiment <u>Education</u> , Wave Propagation	
Experiment Description	
UCLA/TRW used ATS-3 VHF signals to diagnose wave excitation processes in the ionosphere. The modulation used 565 Hz of the 149 MHz uplink from Boulder, Colo. ground station.	
ATS-1 and ATS-3 signals were monitored over a 24-hour period on chart recorder. Correlations with the sola cycle were made. Spectrum analyses was also used to look for sidebands and instabilities.	ŗr
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Report Accession Nos. None	
User Form Nos. 037	
Similar Experiment Nos.	
Primary Keywords: Education, Wave Propagation	
Secondary Keywords: Magnetosphere, Faraday Effect, Ionospher	e.

Experiment No. 284
Experiment Title VHF High Note
Begin Date 3/71 Completion 6/72 (Phase 2)
Experimenter Atomic Energy Commission/Sandia
Geographic Location U.S.A.
Satellite ID ATS-1, 3 Frequency VHF Mode High Power
Category of Experiment Ranging & Position Fixing
Experiment Description
This experiment investigated the feasibility of using satellites to provide near real time position location data to remote stations located in the continguous United States.
A base station was set up to transmit to the satellite on 149.183 MHz and receive on 135.563 MHz. The antennas were crossed dipole yagis, circularly polarized. The mobile station was similar except two antennas were used: a 5/8 λ vertical stub, and a horizontal crossed dipole array, phase for circular polarization end on. Modulation was Manchester split-phase PCM/FM at deviation of ± 6 KHz.
DME tests were run in which the base station sent a ranging tone to the vehicle transponder and a digital phase meter measured the delay between transmitted and received signals. Closed loop measurements for base station and vehicle established equipment delays. Experiment showed degrading effect of Faraday rotation: Signal margin varied widely, favoring vertical stub at times, and the crossed dipole at other times.
Position location was not attempted because of difficulties with the C-band antenna on ATS-3; however, ranging tests were made to determine magnitude of scatter and range rate.
Report Accession Nos. None
User Form Nos. 008
Similar Experiment Nos.
Primary Keywords: Ranging, Position Fixing
Secondary Keywords: Atomic Engran Commission

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econdary Key	words: Stan	nford Univer	sity, Calif	fornia, Neva	ada, New Mexic
	Comp	puters, Indi	an, Rural I	Education	

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Category of Description				, in the second second	
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ategory of E	kperiment _	Data Trans	mission/	Meteorol	оду	,
xperiment De	scription					
Radar picture: transmitted be error rate vs. methods (FSK) uplink, helix	stween Bould . uplink pow digital. A	ler, Colora er were of ircraft ty	ado and R otained u ype anten	eno, Nev	ada. Bi sub car	t rier
Report Access:	lon Nos. 6,	7, 44				
Report Access:		7, 44				

Experiment TitleGE/MA	
	Completion 5/72
	lectric/MARITIME Administration
Geographic Location A	
Satellite ID ATS-1, 3	Frequency VHF Mode N/A
Category of Experiment _	Ranging & Position Fixing
Experiment Description	
tone ranging to determine	h & Development Center (for MARAD) used VHF e the position of a mobile terminal. ATS-1 and 3 was performed, as well as
to the satellite, the reto three slave stations, to the master station vicinly ATS-3 with the mobi Point, Long Island. In	at GE Schenectady, NY, transmitted signals turn signal was recorded by a ship and up which then transponded the range signal a satellite. Initially, the test used le terminal (a ship) located at King's addition to ranging tones, the experiment facsimile teletype, and simplex voice.
Report Accession Nos.	23, 37, 101, 631
User Form Nos. 2-011	
Similar Experiment Nos.	
Infortuciic NOS.	
Primary Keywords: Rangin	
secondary Keywords: Atl Gen	lantic Ocean, Pacific Ocean, Ships, Maritime meral Electric, MARAD

Experiment Ti		- Calypso)				
Begin Date			Completi	on Ja	nuary l	.976	<i>y</i>
Experimenter	Cousteau	Group,	Inc.	:			e j
Geographic Lo	cation	Antarct	ica				
Satellite ID	ATS-163					de _	
Category of E	xperiment	Voic	e and Da	ta Comm	unicati	ons	
Experiment De	scription	i e					
A Jacques Coused ATS-1 and Calypso transfered commenced	d 3 to fac mitted obs	ilitate erved a	communi	ications red dat	. The a from	crew of	of the
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	in the second of						
Report Access	ion Nos.	203	· · · · · · · · · · · · · · · · · · ·				
User Form Nos	. None						
Similar Exper	iment Nos						
Primary Keywo Secondary Key							ography

Experiment No. 290
Experiment Title VHF Bering Sea
Begin Date December 1972 Completion March 1973
Experimenter U.S./U.S.S.R.
Geographic Location Bering Sea
Satellite ID ATS-1 Frequency Mode
Category of Experiment Communication/Meteorology
Experiment Description
A joint experiment involving U.S. and U.S.\$.R. scientists on microwave measurements of the atmosphere, sea, and ice conditions in the area of the Bering Sea. The objective of the experiment was to make measurements from U.S. and U.S.S.R. aircraft of microwave radiation emitted in the K to X band range by the sea surface at varying temperatures and sea state, by the sea ice, and by zones of liquid precipitation.
ATS-1 was used for the communications link between a U.S. communications base at Anchorage, Alaska and a soviet base at Cape Schmidt.
en de la composition de la composition La composition de la
Report Accession Nos. 4.202
User Form Nos. None
Similar Experiment Nos. None
Primary Keywords: Bering Sea, Meteorology
Secondary Keywords: Voice Communication, Microwave Measurements,
Russia, Oceanography

experiment Title Zi		
egin Date Jan 1972		Sep 1973
xperimenter Atomic	c Energy Commission	
eographic Location _		
atellite ID ATS-1		Mode
ategory of Experimen	t Voice Commun	ications
xperiment Description	n e e	
Alamos Scientific Laborersity of Alaska. The magnetic field line magnetic field controls and altitude controls as a satellite	oratory, Sandia Cor he purpose of the e apping using an exp rolled rocket. The connected the grou , Kotzebue (Alaska)	the program were the Los poration, and the Uni- experiment was to do closive barium release communication circuit and stations located at , and Mt. Haleakala on
eport Accession Nos.	26	
ser Form Nos. None	2	
Report Accession Nos. Ser Form Nos. None Similar Experiment No	2	

Experiment No. 292
Experiment Title VHF Clipper
Begin Date 1973 Completion August 1977
Experimenter Moody College of Marine Science/Texas A&M Univ.
Geographic Location <u>Caribbean/Atlantic</u>
Satellite ID ATS-3 Frequency VHF Mode
Category of Experiment Communications/Support
Experiment Description
Moody College of Marine Science & Maritime Resources used ATS-3 for voice communications and transmission of experimental data to and from their research vessel CLIPPER during cruises in the Atlantic. The research program conducted on board the CLIPPER involved the collection and transmission of parameters such as sea surface temperature, salinity, chlorophyll, and water quality. In some instances facsimiles of graphs and charts were transmitted via ATS-3.
. The state of the
Report Accession Nos. 9
User Form Nos. 007, 038, 039, 040
Similar Experiment Nos.
Primary Keywords: Communications, Data Transmission
Secondary Keywords: Oceanography, Meteorology, Caribbean, Atlantic Ocean

Experiment No. 293
Experiment Title GE/EXXON
Begin Date 7/73 Completion 2/74
Experimenter General Electric/EXXON Corp.
Geographic Location Atlantic Ocean
Satellite ID ATS-1, 3 Frequency VHF Mode
Category of Experiment Maritime Communications
Experiment Description
This experiment was a joint effort of Exxon Corporation and the General Electric Company to make a comprehensive evaluation of the maritime uses of satellite communications and position-fixing. The National Aeronautics and Space Administration provided the use of two applications Technology Satellites, ATS-1 and ATS-3, for one hour a day of VHF transmission time. The experiment was conducted from July 1973 through February 1974 during which communications messages and ranging signals were exchanged between the ship ESSO BAHAMAS, carrying oil from Venezuela to the U.S. East Coast, and the General Electric station in Schenectady, New York. The ground station relayed these messages to and from the Exxon New York City office over telephone land lines.
The communications modes used were teletype, voice, facsimile and slow-scan TV. They were evaluated with regard to transmission time, quality, operational ease, interconnection factors, application to specific information transfer, value to operating efficiency as well as their adaptability with the internal communication and management techniques used within the Exxon Corporation.
Various constraints on ship-borne equipment that would affect the design of an operational ship satellite terminal were evaluated. The accuracy and reliability of ranging and position fixing from geostationary satellites using the tone-code technique was investigated and data on the factors affecting its accuracy were obtained. Report Accession Nos. 15
User Form Nos. 050
Similar Experiment Nos.
Primary Keywords: Maritime Communication
Secondary Keywords: Position Fixing, Atlantic Ocean, Ships,

Begin Date January 1973 Completion August 1977

Experiment No. 294

Experiment Title SP HET

atellite ID	TS-1&3	_ Frequency _	Mo	de	
ategory of Exp	_	Education/He	ealth Services		
xperiment Desc	ription				
TS-123 were us elecommunications TS-6 with ATS- apability. Se	lons(HET) -1 and 3 u	experiments. used to give m	One-way vide network intera	o-audio over	ion
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			• 14.5 mg = 1.5 mg =		
eport Accessio	n Nos.	· · · · · · · · · · · · · · · · · · ·			
ser Form Nos.					
imilar Experim					•
		ation, Health			

Experiment No. 295	
Experiment Title VHF NIAID	
Begin Date 10/73 Completion Open	
Experimenter National Institute of Allergy & Infectious Diseases (NIAII)
Geographic Location U.S.A. and Pacific Ocean	
Satellite ID ATS-1 Frequency VHF Mode N/A	
Category of Experiment Communications/Health Services	
Experiment Description	
NIAID was a feasibility study of scientific communications between biomedical research investigators via surface and satellite telecommunications. Using mainly ATS-1, and through the cooperation of Lister Hill National Center for Biomedical Communications/National Library of Medicine (LHNCB/NLM), a regular schedule of communication sessions occured in a frequency ranging from semi-weekly to daily. These sessions involved upward of 100 scientists scattered throughout the United States and the Pacific from Alaska to New Zealand.	*
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en e	
	+1
	47
Report Accession Nos. None	
User Form Nos. 029	
Similar Experiment Nos.	
Primary Keywords: Communications, Health Services	4
Secondary Keywords: Conferences, Cook Islands, Biomedical, Alaska, Pacific Ocean, Education, National Institute of Allergy & Infectious Diseases (NIAID), New Zealand, Hawaii, University of Hawaii, University of the South Pacific	

Experiment No. 297	
Experiment Title VHF - USP/FIJI	- PEACESAT
Begin Date 1/74 Com	pletion <u>Open</u>
Experimenter <u>University of the</u>	South Pacific
Geographic Location Pacific Ocea	an, Hawaji
Satellite ID ATS-1 Freque	ncy VHF Mode N/A
Category of Experiment Communication	ations/Education
Experiment Description	
experiments made available by ATS the opportunity to develop a unic delivery and administration. It	ng the resource use of a small island environment. Eleven University, and the communication S-1 have allowed the University que system of educational
· ·	
	And the second s
Report Accession Nos. 206, 210,	311, 577, 749, 912
User Form Nos. 053	
Similar Experiment Nos.	
Primary Keywords: Education, Com	munications
	Teacher Education, Teleconferencing
Peacesat, University of South Pace Voice Communication, Hawaii	cific, Pacific Ocean, Government,

e Indian Health Center Information System used the ATS-1 F communication system on May 9, 1975 to check out their ound station equipment. The equipment was then used for an
kperiment Description he Indian Health Center Information System used the ATS-1 HF communication system on May 9, 1975 to check out their round station equipment. The equipment was then used for an
he Indian Health Center Information System used the ATS-1 HF communication system on May 9, 1975 to check out their round station equipment. The equipment was then used for an ET experiment on ATS-6.
tanting the second of the The second of the second of
eport Accession Nos. 11, 40, 43, 52, 54, 60, 508, 579, 690
ser Form Nos. None

Experiment No. 301	
Experiment Title VH	FGATE
Begin Date Jan 1974	Completion Sep 1974
Experimenter NOA	A
Geographic Location	
Satellite ID ATS-3	Frequency Mode
Category of Experiment	Voice and Data Communications
Experiment Description	l
The GATE Project used	the ATS-3 satellite for:
of Wisconsin, and Dakas	between ships, the CV-990, the University during critical decision periods just rival in the observation area.
RESEARCHER and GILLISS	sion of radar images from OCEANOGRAPHER, to Dakar to complement satellite images ning" the aircraft program.
limited HF radio equipr	ansmission from GILLISS to augment the ment and number of operators. GILLISS is at minimum data delivery requirements.
(4) Direct communication United States.	ons with operational commands in the
en e	
Report Accession Nos.	None
User Form Nos.	None
Similar Experiment Nos	
Primary Keywords:	Voice and Data Communications
Secondary Keywords:	NOAA GATE Project Radar Facsimile

Experiment No. 302	-	
Experiment Title N	EA	
Begin Date Jan 1976	Completion	Apr. 1977
Experimenter Natio	nal Education Assoc	iation
Geographic Location	Appalachia, Alaska	
Satellite ID ATS-1 &		Mode
Category of Experiment	Voice Communica	tion, Education
Experiment Description)	
ATS-1 and ATS-3 were used in satellites were used in television - radio television and Alaska	four or more Alaska n conjunction with econferences for te	n sites. The ATS-1 & 3
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The figure was the majority of the state of the figure of the state of		
Report Accession Nos.	None	
User Form Nos.	None	
Similar Experiment Nos		
Primary Keywords:	Voice Communicatio	n, Education
Secondary Keywords:	Appalachia Alaska ATS-6 Teachers	

2-62

Teleconference

shima has participated in many experiments using the ATS-1 accraft (S/C) including SSCC (Spin Scan Cloud Cover) earth stures, SSRR (Spread Spectrum Range and Range Rate), as well ATS R&RR (ATS Range and Range Rate), the latter being of sticular help in determining the S/C orbit. Kashima has also perimented with time division multiplex and video transmission lang the S/C in the FT mode. Their transmitter was originally ned to operate with repeater 1, however, since the failure of a repeater (2 Feb. 1972) Kashima has returned to the repeater frequency. Don't Accession Nos208, 598, 617	7	cation <u>Ja</u> <u>ATS-1</u>	Frequency		Mode All	
pacecraft (S/C) including SSCC (Spin Scan Cloud Cover) earth actures, SSRR (Spread Spectrum Range and Range Rate), as well is ATS R&RR (ATS Range and Range Rate), the latter being of articular help in determining the S/C orbit. Kashima has also appertmented with time division multiplex and video transmission sing the S/C in the FT mode. Their transmitter was originally used to operate with repeater 1, however, since the failure of the repeater (2 Feb. 1972) Kashima has returned to the repeater frequency. **Export Accession Nos.** 208, 598, 617.** **Exer Form Nos.** None.** **Initial Experiment Nos.** 241, 246, 253.** **Eximacy Keywords: Time Dissemination, Data Transmission econdary Keywords:	tegory of E	experiment	Time & Freque	ncy Dissemin	ation/Data	Transm
eport Accession Nos. 208, 598, 617 ser Form Nos. None Limitar Experiment Nos. 241, 246, 253 Finary Keywords: Time Dissemination, Data Transmission econdary Keywords:	periment De	scription				
ser Form Nos. None imilar Experiment Nos. 241, 246, 253 rimary Kaywords: Time Dissemination, Data Transmission econdary Keywords:	pacecraft (Sictures, SSR s ATS R&RR (articular he xperimented sing the S/C uned to oper	/C) includi R (Spread S ATS Range a lp in deter with time d in the FT ate with re	ing SSCC (Spin Spectrum Range and Range Rate mining the S/livision multimode. Their speater 1, how	Scan Cloud and Range I), the latte C orbit. Ka plex and vid transmitter ever, since	Cover) eart Rate), as we er being of shima has a leo transmis was origina the failure	ch also ssion ally of
ser Form Nos. None imilar Experiment Nos. 241, 246, 253 rimary Keywords: Time Dissemination, Data Transmission econdary Keywords:						
ser Form Nos. None imilar Experiment Nos. 241, 246, 253 rimary Keywords: Time Dissemination, Data Transmission econdary Keywords:				\mathcal{H}		
ser Form Nos. None imilar Experiment Nos. 241, 246, 253 rimary Keywords: Time Dissemination, Data Transmission econdary Keywords:						
ser Form Nos. None imilar Experiment Nos. 241, 246, 253 rimary Keywords: Time Dissemination, Data Transmission econdary Keywords:						
ser Form Nos. None imilar Experiment Nos. 241, 246, 253 rimary Keywords: Time Dissemination, Data Transmission econdary Keywords:						
ser Form Nos. None imilar Experiment Nos. 241, 246, 253 rimary Keywords: Time Dissemination, Data Transmission econdary Keywords:						
ser Form Nos. None imilar Experiment Nos. 241, 246, 253 rimary Keywords: Time Dissemination, Data Transmission econdary Keywords:						
ser Form Nos. None imilar Experiment Nos. 241, 246, 253 rimary Kaywords: Time Dissemination, Data Transmission econdary Keywords:						
ser Form Nos. None imilar Experiment Nos. 241, 246, 253 rimary Keywords: Time Dissemination, Data Transmission econdary Keywords:		•			4	
Ser Form Nos. None Similar Experiment Nos. 241, 246, 253 Primary Keywords: Time Dissemination, Data Transmission Secondary Keywords:						
ser Form Nos. None imilar Experiment Nos. 241, 246, 253 rimary Keywords: Time Dissemination, Data Transmission econdary Keywords:						
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rimary Keywords: Time Dissemination, Data Transmission econdary Keywords:	l e port Access	ion Nos	208, 598, 617			
	leport Access	ion Nos	208, 598, 617			
econdary Keywords:			208, 598, 617			
econdary Keywords:	ser Form Nos	• None		53		
Secondary Keywords:	Jser Form Nos	• None		53		
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	User Form Nos Similar Exper Primary Keywo	None iment Nos. ords: Time I	241, 246, 29	//	nission	

Experiment No. 305
Experiment Title ALOHA
Begin Date 1972 Completion Open
Experimenter University of Hawaii
Geographic Location U.S.A./Pacific Ocean
Satellite ID ATS-1 Frequency VHF Mode N/A
Category of Experiment Data Transmission/Computer
Experiment Description
The ALOHA System Research Project at the University of Hawaii has developed and built a computer-communication network for console-to-computer and computer-to-computer communications which are joined in a multi-network at the ALOHA System MENEHUNE (multiplexer) using packet broadcasting technique whereby data is sent from one node in a net to another by attaching address information to the data to form a packet, typically from 30 to 1000 bits in length. The packet is then broadcast over a communication channel which is shared by a large number of nodes in the net; as the packet is received by these nodes the address is scanned and the packet is accepted by the proper addressee (or addressees) and ignored by the others. Since the MENEHUNE is interfaced into the University of Hawaii computer, and ARPANET TIP, and ATS-1 satellite channel connected to other machines in the Pacific, and an international TELEX line to Japan, packets sent over the radio channel can be directed to any of these networks under user control. Thus a user with an ALOHA SYSTEM terminal on the small island of Molokai could direct his data packets through MENEHUNE in Honolulu over a geographical area extending from Norway across the Atlantic, the U.S. mainland and the Pacific into Japan & Australia.
Report Accession Nos. 50, 218, 225, 227, 228
User Form Nos. 048, 2-036
Similar Experiment Nos.
Primary Keywords: Data Transmission
Secondary Keywords: NASA Ames Research Center, University of Hawaii, University of Alaska, Alaska, Hawaii, Packet Switching, Pacific Ocean, Computer Network

Experiment Title VHF DRA	KE (Dynamic R	esponse an			
Begin Date <u>1/1975</u>		n <u>Open</u>			
Experimenter Texas A&M U	niversity/Nat	ional Scie	nce Fou	ndation	
Geographic Location Sout	h er n Ocean/An	tarctic			
Satellite ID ATS-3	Frequency	VHF	_ Mode _	N/A	•
Category of Experiment Co	ommunications	/Support			
Experiment Description					
experiment by the Interna- both a monitoring experime and space-time scales of Current (ACC) within the latest theories of dynamical other oceans. The specific the Austral summer of 1974 energy-containing space as in order to design a long- port and internal structure FGGE, and (2) to describe	ent to study variability of Drake Passage balance, mi ic goals of F4-1975) are: nd time scale term experime of the ACC	the statis f the Anta and local xing and e DRAKE (whi (1) to de s in the D ent to mon to be car	rctic C: rctic C: experin xchange ch began scribe rake Pas itor the	roperties ircumpola ments to with n in the ssage e trans- t during	
the Drake Passage and the study of mixing processes	Western Scot ATS-3 was u	ia Sea for	the cor	ntinuing	
the Drake Passage and the	Western Scot ATS-3 was u	ia Sea for	the cor	ntinuing	
the Drake Passage and the study of mixing processes	Western Scot ATS-3 was u	ia Sea for	the cor	ntinuing	
the Drake Passage and the study of mixing processes	Western Scot ATS-3 was u	ia Sea for	the cor	ntinuing	
the Drake Passage and the study of mixing processes	Western Scot ATS-3 was u	ia Sea for	the cor	ntinuing	
the Drake Passage and the study of mixing processes	Western Scot ATS-3 was u	ia Sea for	the cor	ntinuing	
the Drake Passage and the study of mixing processes	Western Scot ATS-3 was u	ia Sea for	the cor	ntinuing	
the Drake Passage and the study of mixing processes	Western Scot ATS-3 was u	ia Sea for	the cor	ntinuing	
the Drake Passage and the study of mixing processes support for those involved	Western Scot ATS-3 was u	ia Sea for	the cor	ntinuing	
the Drake Passage and the study of mixing processes support for those involved	Western Scot . ATS-3 was to a second the second term of the second ter	ia Sea for	the cor	ntinuing	
the Drake Passage and the study of mixing processes support for those involved	Western Scot ATS-3 was to the state of the	ia Sea for	the cor	ntinuing	
The Drake Passage and the study of mixing processes support for those involved the support Accession Nos.	Western Scot . ATS-3 was to a second the second term of the second ter	ia Sea for	the cor	ntinuing	
Report Accession Nos. User Form Nos. 2-012, Similar Experiment Nos.	Western Scot ATS-3 was to the state of the	ia Sea for ised to pro	the cor	ntinuing	

Experiment No. 307	
Experiment Title VHF	OCEAN
Begin Date Dec 1977	Completion Open
Experimenter <u>Universit</u>	ty of Miami
Geographic Location	Atlantic/Florida/Pacific
Satellite ID ATS-3	Frequency VHF Mode N/A
Category of Experiment	Communications/Maritime Communications
Experiment Description	
emargency message handle transmissions. Miami has bit synchronizer and mo	using the ATS-3 VHF for ship routine and ling and also synchronous PCM data has developed the ASCII-PCM odems for high speed computer data. In handling all traffic for Oceanography
and the second of the second o	
Report Accession Nos.	None
User Form Nos.	None
Similar Experiment Nos.	•
Primary Keywords: Com	munications, Maritime Communication
	lantic Ocean, Florida, Ships, University

Experiment No. 309
Experiment Title NSF (GYRE)
Begin Date 3/76 Completion 9/76
Experimenter National Science Foundation/Texas A&M Univ.
Geographic Location Atlantic (tropical), North Atlantic
Satellite ID ATS-3 Frequency VHF Mode N/A
Category of Experiment Communications/Data Transmission
Experiment Description
The National Science Foundation sponsored a series of programs aboard the R/V GYRE during the spring and early ummer of 1976. The basic research was conducted in the tropical Atlantic.
A communications network was established between the GYRE, College Station, Texas and Galveston, Texas using ATS-3. This network was used to investigate the feasibility and utility of using satellite communications to transmit high volume data. Data transmission by voice and facsimile over the satellite VHF channels materially enhanced the quality of the data collection and data reduction facilities. Bathythermometric data was transmitted to computer facilities on shore for quicker analysis.
The research continued the studies of the subsurface counter- current and also included work on the closely related sea- surface part of the system.
This program improved understanding of diagenetic processes in the uppermost meters of deep sea sediments and sharpened ability to read information from the geologic record.
Report Accession Nos. None
User Form Nos. 2-044
Similar Experiment Nos. 325
Primary Keywords: Communications, Data Transmission
Secondary Keywords: National Science Foundation, Texas A&M

Experiment No	_ 		
Experiment Title	VHF DEA		
Segin Date Apr.	. 1976 Completic	on Open	
xperimenter	Drug Enforcement Adm	inistration/GE	
eographic Location	on U.S.		
atellite ID ATS	- 1&3 Frequency	Mode _	
ategory of Exper	iment Voice Com	munications/ Positi	on Fixing
xperiment Descri	ption		
aturalization Ser ate and demonstra atellites to impr	ent Administration (Drvice (INS) conducted ate the ability and urove and land mobile sition fixing capabil	an experiment to i sefulness of geosyr communications and	nvesti- chronous to pro-
EA building in Wa ucson, AZ were us	, and a digital tone- ashington, DC and a B sed as ground station	order Patrol office s. Voice, slow-sca	in n TV,
rom the mobile un Mashington, DC and	nit under a variety o d the south western U r mile were achieved	.S. Vehicle positi	in .ons to
rom the mobile un Mashington, DC and Within one quarter	nit under a variety o d the south western U r mile were achieved	f conditions, both .S. Vehicle positi	in .ons to
rom the mobile un ashington, DC and tithin one quarter	nit under a variety o d the south western U r mile were achieved	f conditions, both .S. Vehicle positi	in .ons to
rom the mobile un Mashington, DC and Within one quarter	nit under a variety o d the south western U r mile were achieved	f conditions, both .S. Vehicle positi	in .ons to
rom the mobile un Mashington, DC and Within one quarter	nit under a variety o d the south western U r mile were achieved	f conditions, both .S. Vehicle positi	in .ons to
rom the mobile un ashington, DC and tithin one quarter	nit under a variety o d the south western U r mile were achieved	f conditions, both .S. Vehicle positi in real-time; even	in ons to closer
rom the mobile un Mashington, DC and within one quarter	nit under a variety o d the south western U r mile were achieved	f conditions, both .S. Vehicle positi	in ons to closer
rom the mobile un ashington, DC and tithin one quarter	nit under a variety o d the south western U r mile were achieved	f conditions, both .S. Vehicle positi in real-time; even	in ons to closer
rom the mobile un ashington, DC and within one quarter after post-experim	nit under a variety o d the south western U r mile were achieved ment analysis.	f conditions, both .S. Vehicle positi in real-time; even	in ons to closer
From the mobile un Vashington, DC and Vithin one quarter After post-expering	nit under a variety o d the south western U r mile were achieved	f conditions, both .S. Vehicle positi in real-time; even	in ons to closer
From the mobile un Mashington, DC and Within one quarter After post-expering Report Accession	nit under a variety of the south western Ur mile were achieved ment analysis. Nos. 631, 767	f conditions, both .S. Vehicle positi in real-time; even	in ons to closer
From the mobile un Vashington, DC and Vithin one quarter After post-experimental Report Accession	nit under a variety of the south western Ur mile were achieved ment analysis. Nos. 631, 767	f conditions, both .S. Vehicle positi in real-time; even	in ons to closer
From the mobile un Vashington, DC and Vithin one quarter After post-expering Report Accession	nit under a variety of the south western Ur mile were achieved ment analysis. Nos. 631, 767	f conditions, both .S. Vehicle positi in real-time; even	in ons to closer
From the mobile un Vashington, DC and Vithin one quarter After post-experimental Report Accession	nit under a variety of the south western Ur mile were achieved ment analysis. Nos. 631, 767 None None	f conditions, both .S. Vehicle positi in real-time; even	in ons to closer

eographic Location		y vhf	ModeN/	<u> </u>
ategory of Experi	iment <u>Communicat</u>	lons		
kperiment Descrip	ption			
ne Goddard Space ommunication equi alk via a satelli	Flight Visitor's ipment of the ATS ite.	Center used -3 so that v	the VHF isitors coul	.đ
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e.	•			
The second secon				
eport Accession N	Nos. None (Thi	s is only a v	visitor demo	nstration

Experiment No	312	.		
Experiment Title	ALC (American	Lutheran Chi	urch)	
Begin Date 6/19	76 Co	mpletion	Dpen	
Experimenter The	American Luthe	eran Church		
Geographic Location	on U.S.A.			·
Satellite ID ATS	-1 Freque	ency <u>VHF</u>	Mode _	N/A
Category of Exper:	iment <u>Education</u>	on/Voice Comm	nunications	
Experiment Descrip	ption			
The American Luther desirability of use terminals to facility the church. In accommunication between American Lutheran and churches, officexperiment used votages.	sing a combinate litate communicate communication to contition, the equipose and church as wellices, and institute the continuous control of the control of	tion of portage tion at mark tinuing education at use national offices between itutions over	able and fixency levels with ation the pried to facilities of The these same of	ed chin ime cate
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Report Accession N	Nos. <u>735</u>			
Hear Form Nos C	2-041	<u> </u>		
User Form Nos		A Bright Control		
ermitter exhermien	403.			
Brimary Varmords.	Pánastios Vi	is Commist		
Primary Keywords:	education, vo		auton h Minnogete	

Experiment No. 315
Experiment Title ERDA
Begin Date <u>January 1978</u> Completion <u>January 1979</u>
Experimenter ERDA
Geographic Location
Satellite ID ATS-1 Frequency Mode
Category of Experiment Communications/Data Transmission
Experiment Description
ERDA conducted radiological survey of former nuclear test site at Enewetak to determine which areas of the atoll require cleanup so they may be returned to the people of Enewetak for beneficial use. This effort was essentially an applied research activity employing new experimental techniques which require prompt and frequent communications between Enewetak and Las Vegas. The communications link was essential to the activity so that voice and technical data could be exchanged on a timely basis. Facsimile transmission devices were employed to transmit data in graphic and tabular form, such as radio-activity isopleths. Voice privacy units were also employed along with clear voice transmission.
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en de la companya de La companya de la co
Report Accession Nos.
User Form Nos.
Similar Experiment Nos. 336
Primary Keywords: Communications, Data Transmission
Secondary Keywords: Nevada, Enewetak, Energy Research and Development Administration (ERDA)

Experiment No. 316
Experiment Title NSTL (National Space Technology Laboratories)
Begin Date 10/5/76 Completion 10/13/76
Experimenter Southern Regional Medical Consortium
Geographic Location Southern U.S.A.
Satellite ID ATS-3 Frequency VHF Mode
Category of Experiment Health Services/Data Transmission
Experiment Description
National Space Technology Laboratories, Bay St. Louis, Mississipper and the Southern Regional Medical Consortium used ATS-3 for an Emergency Medical-Satellite Communications demonstration at the National Convention of Emergency Physicians and Emergency Care Nurses in the Louisiana Superdome in New Orleans.
They transmitted EKG and voice from an ambulance into the emergency room at Forrest General Hospital in Hattiesburg, Convention Center.
The purpose of the demonstration was to acquaint medical practitioners, particularly cardiogists and emergency room physicians, with the extended telemetry communications capability of satellites.
Report Accession Nos. None
User Form Nos. 2-019
Similar Experiment Nos.
Primary Keywords: Health Services, Data Transmission
Secondary Keywords: Mississippi, Southern U.S.A., Southern Regional Medical Consortium, National Space Technology Laboratories, Hospital, Electrocardiogram

Q.J

Experiment No. 317

Experiment Title LAMONT
Begin Date 10/15/76 Completion 3/8/77
Experimenter Lamont-Doherty Geological Observatory
Geographic Location Southern Ocean
Satellite ID ATS-3 Frequency VHF Mode N/A
Category of Experiment Data Transmission
Experiment Description
During the austral summer 1976/1977 the Office of Polar Programs of the U.S. National Science Foundation funded a research project aboard the Argentine vessel ARA ISLAS ORCADAS (formerly the USNS ELTANIN). The goals of the project were to collect a set of modern hydrographic data in the Atlantic sector of the Southern Ocean, an area which previously had been poorly sampled. The time of the cruises were:
Cruise 11-76 - October 24, 1976 - December 20, 1976 - Buenos Aires to Cape Town
Cruise 12-77 - January 3, 1977 - March 5, 1977 - Cape Town to Buenos Aires.
During the period January-February 1977 the U.S. ship MELVILLE was operating in the Drake Passage, as part of the International Southern Ocean Studies project F DRAKE-77. ATS-3 was used for communications support.
Report Accession Nos. None
User Form Nos. 2-015
Similar Experiment Nos. 306
Primary Keywords: Data Transmission
Secondary Keywords: Argentina, Antarctic, Ships, Hydrology, Atlantic Ocean, Southern Ocean, New York, National Science Foundation (NSF)

2-73

Experiment No. 318	
Experiment Title DRI	
Begin Date 12/76 Completion 1/77	
Experimenter Desert Research Institute	
Geographic Location Antarctica	
Satellite ID ATS-1, 3 Frequency UHF Mode N/A	
Category of Experiment Meteorology	
Experiment Description	
A weather radar system was installed at Palmer Station, Antarc and is being used to study mesoscale atmospheric-ocean interaction the Antarctic Peninsula. A VHF satellite communications system was designed, fabricated and tested for transmission of data and voice communication between Antarctica and Reno, usin VHF transponders aboard NASA ATS-1 and ATS-3 satellites. Test were made using ground stations at McMurdo (via ATS-1) and Palmer Station (via ATS-3).	tion g
Report Accession Nos. None	
User Form Nos. 2-021	
Similar Experiment Nos.	
Primary Keywords: Meteorology	
Secondary Keywords: Desert Research Institute, Antarctic,	

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egin Date			ion	5/77	-
		evelopment Cor	poration_		
-	Location) h	
		Frequency		Mode _	N/A
ategory of	Experiment	Ranging &	Position F	ixing	-
experiment I	Description				
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eport Acces	ssion Nos.	684			
ser Form No	os. <u>2-00</u> 2				

Experiment No. 320 Experiment Title SAMOA				
Begin Date 1/77		On one	,	
Experimenter Universi				
Geographic Location H		CHARLE	<u> </u>	
Satellite ID ATS-1		WP	Mode	N/A
Category of Experiment	- 			N/A
Experiment Description				
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credit courses to upgrad	de Samoa emplo	Accuedate	e Exp. No	297).
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Report Accession Nos	745			
User Form Nos. None				
Similar Experiment Nos.	297			
	· ·			<u> </u>
Primary Keywords: Educ	ation, Health	Services		
Secondary Keywords: Sam Hawaii, University of S	oa, Voice Comm	unication,	Peacesa	t,

Experiment No	o. <u>321</u>	namanja			
Experiment Ti	itle FLT	AC			
Begin Date _	1/77	Complet	ion o	Den	
Experimenter	Departm	ment of the Nav	У		
Geographic Lo	ocation _	Western Hemis	phere		
Satellite ID	ATS-3	Frequency	VHF	Mode	N/A
Category of	Experiment	t <u>Communicati</u>	on/Mariti	me Communi	cations
Experiment De	escription	a			
Philippines; Puerto Rico; Virginia. Ti Fleet Analys; basis, to dis these station transmission The informat: facility are lines. These in quality,	such remote Okinawa, MCAS Cher hese field is Center scuss oper of low date of	•	the Repu Greece; R h Carolin maintaine is neces gistic su also occa l informa field st mmercial ficult to	blic of th oosevelt R a and Norf d and oper sary, on a pport deta sions when tion is re ations and and milita establish	e oads, olk, ated by daily ils with the quired. the Coron ry telepho , poor
necessary for of the available communication Naval Station to determine circuit for The circuit most of the	r conducti able commu ns between n, Puerto the viabi the Fleet proposed w time alloc	nter assembleding a short ter inication satel Corona, Calification. The purility of utiliz Analysis Center as operated as cated. Some terms of the corona co	m experim lites (AT ornia and pose of t ing a sat r communi a voice	ent utiliz S-3) suita Roosevelt his experi ellite com cations pr circuit du	ing one ble for Roads ment was munication oblem.
Report Acces	sion Nos.	None	6.		
User Form No	s. 2-010)			
Similar Expe	rament No:	s			
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Primary Keyw	ords: Cor	mmunications, M	aritime C	Communicati	on
Secondary Ke U.S. Navy, F	ywords: Neet Analy	Western Hemisph ysis Center, Ph	ere, Cali ilippines	forina, Pu , Japan, G	erto Rico, reece,

Experiment No. 322

Report Accession Nos. None Report Accession Nos. None Separative Data 1/15/77 Completion 1/30/77 Experimenter Woods Hole Oceanographic Institute Geographic Location Pacific/Galapagos Islands Satellite ID ATS-3 Frequency VHF Mode N/A Category of Experiment Communications/Voice Communications Experiment Description A daily schedule was maintained between research ship and base station during which audio and facsimile data were transmitted with such information as positions of satellite-tracked buoys, schematic diagrams, and plotted data. Phone patches were made to personnel preparing to join the ship at the next port and to shore-based associates for advise on work underway. Report Accession Nos. None User Form Nos. 2-029 Similar Experiment Nos. Primary Keywords: Communications, Voice Communication	Experiment Title <u>WHOI</u>	(KNORR)
Geographic Location Pacific/Galapagos Islands Satellite ID ATS-3 Frequency VHF Mode N/A Category of Experiment Communications/Voice Communications Experiment Description A daily schedule was maintained between research ship and base station during which audio and facsimile data were transmitted with such information as positions of satellite-tracked buoys, schematic diagrams, and plotted data. Phone patches were made to personnel preparing to join the ship at the next port and to shore-based associates for advise on work underway. Report Accession Nos. None User Form Nos. 2-029 Similar Experiment Nos.	Begin Date <u>1/15/77</u>	Completion 1/30/77
Satellite ID ATS-3 Frequency VHF Mode N/A Category of Experiment Communications/Voice Communications Experiment Description A daily schedule was maintained between research ship and base station during which audio and facsimile data were transmitted with such information as positions of satellite-tracked buoys, schematic diagrams, and plotted data. Phone patches were made to personnel preparing to join the ship at the next port and to shore-based associates for advise on work underway. Report Accession Nos. None User Form Nos. 2-029 Similar Experiment Nos.	Experimenter Woods Hol	le Oceanographic Institute
Category of Experiment Communications/Voice Communications Experiment Description A daily schedule was maintained between research ship and base station during which audio and facsimile data were transmitted with such information as positions of satellite-tracked buoys, schematic diagrams, and plotted data. Phone patches were made to personnel preparing to join the ship at the next port and to shore-based associates for advise on work underway. Report Accession Nos. None User Form Nos. 2-029 Similar Experiment Nos.	Geographic Location	acific/Galapagos Islands
Experiment Description A daily schedule was maintained between research ship and base station during which audio and facsimile data were transmitted with such information as positions of satellite-tracked buoys, schematic diagrams, and plotted data. Phone patches were made to personnel preparing to join the ship at the next port and to shore-based associates for advise on work underway. Report Accession Nos. None User Form Nos. 2-029 Similar Experiment Nos.	Satellite ID ATS-3	Frequency VHF Mode N/A
A daily schedule was maintained between research ship and base station during which audio and facsimile data were transmitted with such information as positions of satellite-tracked buoys, schematic diagrams, and plotted data. Phone patches were made to personnel preparing to join the ship at the next port and to shore-based associates for advise on work underway. Report Accession Nos. None User Form Nos. 2-029 Similar Experiment Nos.	Category of Experiment	Communications/Voice Communications
station during which audio and facsimile data were transmitted with such information as positions of satellite-tracked buoys, schematic diagrams, and plotted data. Phone patches were made to personnel preparing to join the ship at the next port and to shore-based associates for advise on work underway. Report Accession Nos. None User Form Nos. 2-029 Similar Experiment Nos.	Experiment Description	
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Jser Form Nos. 2-029 Similar Experiment Nos.		
Similar Experiment Nos.	Report Accession Nos	None
Similar Experiment Nos.	Isaa Barra Nas - 2 666	
Primary Keywords: Communications Voice Communication	sturrar experiment Nos.	
veimary Kaywords. Comminications. Voice Comminication		unications Voice Communication
Secondary Keywords: Pacific, Galapagos Islands, Ships, Oceanograp		

Experiment Title Siple
Begin Date 2/14/77 Completion Open
Experimenter National Science Foundation/Stanford University
Geographic Location Antarctica/Canada
Satellite ID ATS-3 Frequency VHF Mode N/A
Category of Experiment Communications/Voice Communications
#xperiment Description
Studies of wave-particle and wave-wave interactions using a VLF transmitting facility located at Siple Station, Antarctica. The VLF transmitting facility consists of a 150 KW transmitter and 21.2 km elevated center-fed dipole antenna.
The Siple transmitter was set up in order to achieve a controlled means of probing the magnetospheric plasma. A passive VLF receiving facility was established at the conjugate point to Siple at Roberval, Quebec, Canada.
Since the transmitter modulation, frequency, and power are key parameters in the interaction process, a real time communication link between Roberval and Quebec was required to optimize the experiment. The operator at Roberval recommends the transmitting parameters based on his observation of the behavior of the natural phenomena at Roberval.
Since using the ATS-3 communications and data link between Roberval and Siple Station the data acquired have increased by 500% and specific
experiments have been conducted on a time scale of one month versus several months previously (without real time communications).
several months previously (without real time communications).
several months previously (without real time communications).
several months previously (without real time communications).
experiments have been conducted on a time scale of one month versus several months previously (without real time communications).
several months previously (without real time communications).
several months previously (without real time communications). Report Accession Nos. None
several months previously (without real time communications).
several months previously (without real time communications).
Report Accession Nos. None
Report Accession Nos. None User Form Nos. 2-007
Report Accession Nos. None User Form Nos. 2-007

Experiment No. 325
Experiment Title GYRE (Ocean)
Begin Date 4/11/77 Completion 10/24/78
Experimenter National Science Foundation/Texas A&M University
Geographic Location North Atlantic, Caribbean, Gulf of Mexico
Satellite ID ATS-3 Frequency VHF Mode N/A
Category of Experiment Communications/Data Transmission
Experiment Description
The National Science Foundation sponsored a series of oceanographic research programs aboard the R/V GYRE of Texas A&M University during the summer of 1977. These involved investigations of chemistry, geochemistry, and geology in the Western North Atlantic, the Caribbean, and the Gulf of Mexico. Scientists from several institutions worked cooperatively on these projects. ATS-3 was used to establish a communications network between the GYRE and their shore based at College Station and Galveston,
Texas, to continue investigations of the utility of satellite communications to transmit oceanographic data.
and the control of th
Report Accession Nos. None
User Form Nos. 2-044
Similar Experiment Nos. 309
Data Managara
Primary Keywords: Communications, Data Transmission
Secondary Keywords: National Science Foundation, Texas A&M University, Atlantic Ocean, Caribbean, Gulf of Mexico, Texas, Ships

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periment Title NORPAX	(North Paci)	ic Exper	Iment)	
egin Date 5/9/77 Office of Nav operimenter University o	val Research	/National	Science F	oundation
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kperiment Description				
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NR/NSF established termi etween a research vessel and their main scientific communications and data to perations with other ele	operating in Samuel of the second control of	in the rec in Diego. Setter coc Sipating	gion north This allo ordinate th in this wor	of Hawaii wed he vessel k. These
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laska; NIMBUS-G RAMS tra egion; a cooperative pro raphic observations.	cking of budgram of 25	oys drift	ing through	our
ncluded: special flight laska; NIMBUS-G RAMS tracegion; a cooperative prographic observations. Report Accession Nos	cking of budgram of 25	oys drift	ing through	our
Alaska; NIMBUS-G RAMS tra region; a cooperative pro raphic observations.	cking of budgram of 25	oys drift	ing through	our

Experiment Title Mont	ana		
Begin Date 6/1/77	Completion _	11/15/77	
Experimenter State of	Montana/Division Co	ommunication &	Forestr
Geographic Location	Montana		
Satellite ID ATS-3	Frequency	Mode _	N/A
Category of Experiment	t Communications		
Experiment Description	n		•
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Similar Experiment No:	S .		

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Similar	Exper	lment N	ios.	660		·						

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(NSF)/

Experimenter Office o Universi Geographic Location					ce Foundati
atellite ID ATS-3	Frequ		·	Mode	
ategory of Experiment xperiment Description		cations	/Data	ransmiss:	Lon
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Report Accession Nos.	d States, as well a	s their own sites in
Report Accession Nos.	None None	s their own sites in

Secondary Keywords:

Jamaica Barbados Instruction Teleconferencing Facsimile 2-85

Experiment T	itle <u>VH</u>	MTS GAS T			
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Begin Date _		•	tion Septem	nber 1977	
·		evelopment Co	rp.		
Geographic L		<u> </u>			
		Frequency	,—	Mode	
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Experiment D	escription				
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Report Acces	sion Nos.	684			
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Similar Expe	ximent Nos	. 319			
Primary Keywo	ords. Ran	ging, Positio	n Fixing		
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Begin Date 10	● <u>ERDA/DoD</u> /1/77	Completion	/30/78	
Experimenter E	nergy Researc	h & Development	Administratio	n (ERDA)
Geographic Loca	tion Nevada/	Enewetak		
Satellite ID A	TS-1 Fr	equency VHF	Mode	N/A
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Experiment Desc	ription			,
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	033, 034, 03	5, 041, 042		

Satellite ID ATS-1&3 Frequency VHF Mode N/A Category of Experiment Communications Experiment Description (Department of Interior Satellite Project) The Department of Interior Satellite Project is currently utilizing the ATS-1 i multi-disciplined educational program for the Trust Territori at Ponape, Palau, Saipan, and Majuro, where VHF terminals are located. The DISP network will include 21 VHF stations by Jul 1978, and will be augmented later in 1978 when video applicat will be tested via ATS-6. The Denver facility is used to relay teleconferences between the Trust Territory locations a locations in the eastern United States in Washington, D.C., a in New York. Also, it is being used for communication among the Trust Territory Districts. Report Accession Nos. 897 User Form Nos. None Similar Experiment Nos.	Begin Date 12/8/77 Completion Open Experimenter U.S. Department of the Interior Geographic Location Washington, D.C./New York/Trust Territory Satellite ID ATS-123 Frequency VHF Mode N/A Category of Experiment Communications Experiment Description (Department of Interior Satellite Project) The Department of Interior Satellite Project is currently utilizing the ATS-1 in multi-disciplined educational program for the Trust Territoric at Ponage, Palau, Saipan, and Majuro, where VHF terminals are located. The DISP network will include 21 VHF stations by Jur 1978, and will be augmented later in 1978 when video applicativial be tested via ATS-6. The Denver facility is used to relay teleconferences between the Trust Territory locations and locations in the eastern United States in Washington, D.C., are in New York. Also, it is being used for communication among the Trust Territory Districts. Report Accession Nos. 897 User Form Nos. None	Experiment No. 338				
Experimenter U.S. Department of the Interior Geographic Location Washington, D.C./New York/Trust Territor Satellite ID ATS-123 Frequency VHF Mode N/A Category of Experiment Communications Experiment Description (Department of Interior Satellite Project) The Department of Interior Satellite Project is currently utilizing the ATS-1 i multi-disciplined educational program for the Trust Territori at Ponape, Palau, Saipan, and Majuro, where VHF terminals are located. The DISP network will include 21 VHF stations by Ju 1978, and will be augmented later in 1978 when video applicat will be tested via ATS-6. The Denver facility is used to relay teleconferences between the Trust Territory locations a locations in the eastern United States in Washington, D.C., a in New York. Also, it is being used for communication among the Trust Territory Districts.	Experimenter U.S. Department of the Interior Geographic Location Washington, D.C./New York/Trust Territory Satellite ID ATS-163 Frequency VHF Mode N/A Category of Experiment Communications Experiment Description (Department of Interior Satellite Project) The Department of Interior Satellite Project is currently utilizing the ATS-1 in multi-disciplined educational program for the Trust Territoria at Fonape, Palau, Saipan, and Majuro, where VHF terminals are located. The DISP network will include 21 VHF stations by Jul 1978, and will be augmented later in 1978 when video applicativill be tested via ATS-6. The Denver facility is used to relay teleconferences between the Trust Territory locations are locations in the eastern United States in Washington, D.C., are in New York. Also, it is being used for communication among the Trust Territory Districts. Report Accession Nos. 897 User Form Nos. None Similar Experiment Nos.				0-0-	
Geographic Location Washington, D.C./New York/Trust Territor Satellite ID ATS-123 Frequency VHF Mode N/A Category of Experiment Communications Experiment Description (Department of Interior Satellite Project) The Department of Interior Satellite Project is currently utilizing the ATS-1 i multi-disciplined educational program for the Trust Territori at Ponape, Palau, Saipan, and Majuro, where VHF stations by Ju 1978, and will be augmented later in 1978 when video applicat will be tested via ATS-6. The Denver facility is used to relay teleconferences between the Trust Territory locations a locations in the eastern United States in Washington, D.C., a in New York. Also, it is being used for communication among the Trust Territory Districts.	Geographic Location Washington, D.C./New York/Trust Territory Satellite ID ATS-183 Frequency VHF Mode N/A Category of Experiment Communications Experiment Description (Department of Intérior Satellite Project) The Department of Interior Satellite Project is currently utilizing the ATS-1 in multi-disciplined educational program for the Trust Territoria at Ponape, Palau, Saipan, and Majuro, where VHF terminals are located. The DISP network will include 21 VHF stations by Jur 1978, and will be augmented later in 1978 when video applicationally be tested via ATS-6. The Denver facility is used to relay teleconferences between the Trust Territory locations are locations in the eastern United States in Washington, D.C., are in New York. Also, it is being used for communication among the Trust Territory Districts. Report Accession Nos. 897 User Form Nos. None Similar Experiment Nos.	•				
Satellite ID ATS-183 Frequency VHF Mode N/A Category of Experiment Communications Experiment Description (Department of Interior Satellite Project) The Department of Interior Satellite Project is currently utilizing the ATS-1 i multi-disciplined educational program for the Trust Territori at Ponape, Palau, Saipan, and Majuro, where VHF terminals are located. The DISP network will include 21 VHF stations by Ju 1978, and will be augmented later in 1978 when video applicat will be tested via ATS-6. The Denver facility is used to relay teleconferences between the Trust Territory locations a locations in the eastern United States in Washington, D.C., a in New York. Also, it is being used for communication among the Trust Territory Districts. Report Accession Nos. 897 User Form Nos. None Similar Experiment Nos.	Satellite ID ATS-183 Frequency VHF Mode N/A Category of Experiment Communications Experiment Description (Department of Interior Satellite Project) The Department of Interior Satellite Project is currently utilizing the ATS-1 in multi-disciplined educational program for the Trust Territorie at Ponape, Palau, Saipan, and Majuro, where VHF terminals are located. The DISP network will include 21 VHF stations by Jur 1978, and will be augmented later in 1978 when video applicationally the tested via ATS-6. The Denver facility is used to relay teleconferences between the Trust Territory locations are locations in the eastern United States in Washington, D.C., are in New York. Also, it is being used for communication among the Trust Territory Districts. Report Accession Nos. 897 User Form Nos. None Similar Experiment Nos.					Marritan
Category of Experiment Communications Experiment Description (Department of Interior Satellite Project) The Department of Interior Satellite Project is currently utilizing the ATS-1 i multi-disciplined educational program for the Trust Territori at Ponape, Palau, Saipan, and Majuro, where VHF terminals are located. The DISP network will include 21 VHF stations by Ju 1978, and will be augmented later in 1978 when video applicated will be tested via ATS-6. The Denver facility is used to relay teleconferences between the Trust Territory locations a locations in the eastern United States in Washington, D.C., a in New York. Also, it is being used for communication among the Trust Territory Districts. Report Accession Nos. 897 User Form Nos. None Similar Experiment Nos.	Category of Experiment Communications Experiment Description (Department of Interior Satellite Project) The Department of Interior Satellite Project is currently utilizing the ATS-1 in multi-disciplined educational program for the Trust Territoric at Ponape, Palau, Saipan, and Majuro, where VHF terminals are located. The DISP network will include 21 VHF stations by Jur 1978, and will be augmented later in 1978 when video applicativitle tested via ATS-6. The Denver facility is used to relay teleconferences between the Trust Territory locations are locations in the eastern United States in Washington, D.C., are in New York. Also, it is being used for communication among the Trust Territory Districts. Report Accession Nos. 897 User Form Nos. None Similar Experiment Nos.	-				
(Department of Interior Satellite Project) The Department of Interior Satellite Project is currently utilizing the ATS-1 i multi-disciplined educational program for the Trust Territori at Ponape, Palau, Saipan, and Majuro, where VHF terminals are located. The DISP network will include 21 VHF stations by Ju 1978, and will be augmented later in 1978 when video applicated will be tested via ATS-6. The Denver facility is used to relay teleconferences between the Trust Territory locations a locations in the eastern United States in Washington, D.C., a in New York. Also, it is being used for communication among the Trust Territory Districts. Report Accession Nos. 897 User Form Nos. None Similar Experiment Nos.	(Department of Interior Satellite Project) The Department of Interior Satellite Project is currently utilizing the ATS-1 in multi-disciplined educational program for the Trust Territoris at Ponape, Palau, Saipan, and Majuro, where VHF terminals are located. The DISP network will include 21 VHF stations by Jur 1978, and will be augmented later in 1978 when video applicativil be tested via ATS-6. The Denver facility is used to relay teleconferences between the Trust Territory locations are locations in the eastern United States in Washington, D.C., are in New York. Also, it is being used for communication among the Trust Territory Districts. Report Accession Nos. 897 User Form Nos. None Similar Experiment Nos.			-	MOGG	_ N/A
(Department of Interior Satellite Project) The Department of Interior Satellite Project is currently utilizing the ATS-1 is multi-disciplined educational program for the Trust Territori at Ponape, Palau, Saipan, and Majuro, where VHF terminals are located. The DISP network will include 21 VHF stations by Jul 1978, and will be augmented later in 1978 when video applicate will be tested via ATS-6. The Denver facility is used to relay teleconferences between the Trust Territory locations a locations in the eastern United States in Washington, D.C., a in New York. Also, it is being used for communication among the Trust Territory Districts. Report Accession Nos. 897 User Form Nos. None Similar Experiment Nos.	(Department of Interior Satellite Project) The Department of Interior Satellite Project is currently utilizing the ATS-1 in multi-disciplined educational program for the Trust Territorie at Ponape, Palau, Saipan, and Majuro, where VHF terminals are located. The DISP network will include 21 VHF stations by Jur 1978, and will be augmented later in 1978 when video applicativily be tested via ATS-6. The Denver facility is used to relay teleconferences between the Trust Territory locations are locations in the eastern United States in Washington, D.C., are in New York. Also, it is being used for communication among the Trust Territory Districts. Report Accession Nos. 897 User Form Nos. None Similar Experiment Nos.			ations		
Interior Satellite Project is currently utilizing the ATS-1 is multi-disciplined educational program for the Trust Territori at Ponape, Palau, Saipan, and Majuro, where VHF terminals are located. The DISP network will include 21 VHF stations by Ju 1978, and will be augmented later in 1978 when video applicat will be tested via ATS-6. The Denver facility is used to relay teleconferences between the Trust Territory locations a locations in the eastern United States in Washington, D.C., a in New York. Also, it is being used for communication among the Trust Territory Districts. Report Accession Nos. 897 User Form Nos. None Similar Experiment Nos.	Interior Satellite Project is currently utilizing the ATS-1 in multi-disciplined educational program for the Trust Territoric at Ponape, Palau, Saipan, and Majuro, where VHF terminals are located. The DISP network will include 21 VHF stations by Jur 1978, and will be augmented later in 1978 when video applicate will be tested via ATS-6. The Denver facility is used to relay teleconferences between the Trust Territory locations are locations in the eastern United States in Washington, D.C., are in New York. Also, it is being used for communication among the Trust Territory Districts. Report Accession Nos. 897 User Form Nos. None Similar Experiment Nos.	experiment pescription				
Report Accession Nos. 897 User Form Nos. None Similar Experiment Nos.	Report Accession Nos. 897 User Form Nos. None Similar Experiment Nos.	Interior Satellite Promulti-disciplined educated at Ponape, Palau, Saip located. The DISP net 1978, and will be augmented to the tested via ATS relay teleconferences locations in the easter in New York. Also, it	cational propan, and Macwork will mented late 5-6. The Detween the property of	rrently u ogram for juro, who include 2 r in 1978 enver fac e Trust 1 States ir	tilizing the trust of the Trust of the term of the ter	me ATS-1 in Territories in als are cons by June application and continuous and co
User Form Nos. None Similar Experiment Nos.	User Form Nos. None Similar Experiment Nos.	the Trust Territory Di	istricts.	•		// · · · · · · · · · · · · · · · · · ·
User Form Nos. None Similar Experiment Nos.	User Form Nos. None Similar Experiment Nos.	•				//
Jser Form Nos. None Similar Experiment Nos.	Jser Form Nos. None Similar Experiment Nos.					
User Form Nos. None Similar Experiment Nos.	User Form Nos. None Similar Experiment Nos.					
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Jser Form Nos. None Similar Experiment Nos.	Jser Form Nos. None Similar Experiment Nos.					
User Form Nos. None Similar Experiment Nos.	User Form Nos. None Similar Experiment Nos.					
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User Form Nos. None Similar Experiment Nos.	User Form Nos. None Similar Experiment Nos.					
User Form Nos. None Similar Experiment Nos.	User Form Nos. None Similar Experiment Nos.	<u> </u>	907			and the second s
Similar Experiment Nos.	Similar Experiment Nos.	Report Accession Nos.	897			
Similar Experiment Nos.	Similar Experiment Nos.	None				
		OSGI FOLM MOS.				
		ormitar experiment Nos	•			
	Primary Kevwords: Communications					·

Begin Date <u>Sept</u> Experimenter <u>pr</u> Geographic Locat	SSC (Public Ser		149-1	onsortium	a)
Satellite ID	. \	neucy		Mode	
Category of Expe Experiment Desc		sting			
ATS-3 and 6 are	_	e nublical		eting nro	ogrammin.
to station KVZK	in Samoa. See	Experimen	nt Numb	er 672.	At annuty
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	98 - A				
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	# #				
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en e					
Report Accession	n Nos. 922				
Jser Form Nos.		No.			
Similar Experime	ent Nos. 661,	672			

Experiment No. 342	
Experiment Title Peru	
Begin Date <u>January 1978</u> Completion	July 1978
Experimenter Adventures Unlimited	
Geographic Location Peru	
Satellite ID ATS-3 Frequency	Mode
Category of Experiment Voice Communication	tions
Experiment Description	
Adventures Unlimited is mounting an expanding rainforest of south-eastern Paru, for the identification of subsequent scientific is on film and in print the process involved expedition. This documentation will emph of multi-talented persons from a variety coordinating their efforts toward one combined to produce fourteen, half-hour fill distribution both in the United States and professional educators within the organized education packets for elementary and second well as a college text.	purpose of positive nvestigation, to document in mounting such an asize the human story of professional backgrounds mon objective. They med segments for television a abroad. In addition, sation are devising both
ATS-3 will ensure the communications team tact of each group while in the jungle and to the media of the expedition's progress	d supply daily reports
Report Accession Nos. None	
User Form Nos. None	
Similar Experiment Nos.	
Primary Keywords: Voice Communications Secondary Keywords: peru, Jungle, Voice,	Education, Rainforest

Experiment No. 343	_
Experiment Title Oran	ge
Begin Date July 1979	Completion July 1979
Experimenter NSF	
Geographic Location	Antarctica, California
Satellite ID ATS-3	Frequency Mode
Category of Experiment	Voice Communications
Experiment Description	
search operations at Si	as communication link to coordinate re- ple and Palmer stations (which are pre- Antarctica with operational headquarters
erikan di kacamatan di Kabupatèn Balandaran Kabupatèn Balandaran Kabupatèn Balandaran Kabupatèn Balandaran Kab Balandaran Balandaran Balandaran Balandaran Balandaran Balandaran Balandaran Balandaran Balandaran Balandaran	
•	
Report Ascession Nos.	None
User Form NosNon	8
Similar Experiment Nos.	
Primary Keywords:	Voice Communications
Secondary Keywords:	Antarctica Siple Station Palmer Station

Experiment No. 344 Experiment Title Barbac	läs	
Begin Date Aug. 1978		Sept. 1978
Experimenter Dept. of Sta		Service
Geographic Location Bar		
Satellite ID ATS-3	~	Mode
Category of Experiment		
Experiment Description		
The Red Cross of Baxbados : information and training fr in the latest techniques or	om the America	n Red Cross Organization
		$\label{eq:constraint} \chi_{\mathbf{y}} = (1 + \epsilon_{\mathbf{y}})^{-1} + (1 + \epsilon_{\mathbf$
en jaro eta erroria eta eta eta eta eta eta eta eta eta et		
Report Accession Nos.	None	
User Form Nos. None		
Similar Experiment Nos	333	
Primary Keywords: Heal	th	

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SECTION 2.2

ATS-6 EXPERIMENT DATA FORMS

Experiment No. 601	
Experiment Title Radio Frequency In	· · · · · · · · · · · · · · · · · · ·
Begin Date <u>June 1974</u> Completio	
Experimenter <u>NASA/GSFC/Telecommunicat</u> Geographic Location U.S.	lons Systems
Satellite ID <u>ATS-6</u> Frequency Category of Experiment <u>Wave Propagat</u>	Mode
Experiment Description	LOR
The frequency band from 5.925 to 6.42 satellites and by terrestrial microway possibility of microwave links pointed interference to the uplinks of domest communications satellites sharing the mathematical model has been derived for at geostationary orbit based on the known distribution of the terrestrial The ATS-6 is sensitive to signals in the direction of the satellite. Signals of the direction of the satellite.	we links. There is a did at the horizon causing ic and international same frequency band. A or predicting the fields nown characteristics and microwave relay system. the range of 10 dBW radiated ignals in the range of
Report Accession Nos. 593	
User Form Nos. None	
Similar Experiment Nos.	
Primary Keywords: Radio Frequency Inte Secondary Keywords: ATS-6 Electromagnetic M Mathematical Mode	easurement, Radio Relay Systems,

Experiment No. 602				
Experiment Title Very Hig				-
Begin Date June 1974	Completion	September	1974	
Experimenter NASA/GSFC -		e Div.		
Geographic Location <u>U.S.</u>				-
Satellite ID ATS-6		Mod	le	
Category of Experiment	Meteorology			
Experiment Description	· · · · · · · · · · · · · · · · · · ·	1		
The Very High Resolution accurately determine clousurface temperature. The resolution data in the viconsisted of a high preciwhich looked at Earth, a the satellite to Earth, a formatting and quick-look the computers at NASA/GSF during the summer of 1974	d motion and a VHRR recorder sible and infinition, scanning digital-data special comparts processing grocessing grocessin	improve meth high spati rared window , two-chann transmission uter-augment round statioundred image	nods of est al and rad to The systel radiome system fra ed digital on system, as were tak	imating liance stem ster com and
the chopper motor failed.				
		2		
		•		
Andreas Andreas Andreas Andreas Andrea Andreas Andreas				
Report Accession Nos. 766	5, 846			
User Form Nos. None				
Similar Experiment Nos.				
Primary Keywords: Radiomet				

Experiment Title Rad Begin Date June 1974		
Experimenter NASA/GSF	C ATS-6 Project (In	House)
Geographic Location		
Satellite ID ATS-6		Mode
Category of Experiment Experiment Description		
2670 MGH transponder EXP was to measure in	is on the edge of nterference level.	the radio astronomy bar
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and the second of the second o		
Report Accession Nos.		
User Form Nos.		
Similar Experiment Nos	• 1	

legin Date <u>June 1974</u>	Completion Jan 1	975
xperimenter <u>NASA/GSFC</u>		
eographic Location		
atellite ID ATS-6		Mode
ategory of Experiment _	Satellite Control	
experiment Description		
The Space Craft Attitu Controls Experiment (S to maintain precise at for an extended period inputs using the groun automatic execution. control loop.	APPSAC) was to demonst titude stabilization i of time in the presen d attitude control com	rate the ability n a fixed direction ce of all disturbing mand link with
	Q.	
port Accession Nos.	766	
er Form Nos. None		

Experiment No. 605	TS/CTS EXPERIMENT D		
Experiment Title PI	LACE		
Begin Date Sept. 1974		June 1975	
Experimenter NASA	Completion		
Geographic Location	U.S.		
Satellite ID ATS-6	Frequency	Mode .	
Category of Experiment			
Experiment Description	}		
and 8575Hz are phase mo from the ground station	tones to provide a nslated tones, equivodulated onto a carroto the mobile unit onder, demodulating satellite to the ground cessed by the ground	non-ambiguous range ralent to 25Hz, 175Hz, 122 ier and transmitted via ATS-6. The mobile and retransmitting the round station. The station to determine	5Hz
round-trip delay and he	ance two-way range t	o die mobile diff.	
9			
O ₁			
	en era en		
Report Accession Nos.	552, 605, 685, 6	86, 687	
User Form Nos. No	ne		
Similar Experiment Nos	265,657,664		
Primary Keywords:	Ranging, PLACE		
Secondary Keywords:	L-Band		

A	ATS/CTS EXPERIMENT DATA
Experiment No. 606	
Experiment Title	Radio Beacon
	Completion 7/79
Experimenter NOAA,	Space Environment Lab
Geographic Location	U.S., W. Germany, India
Satellite ID ATS-6	Frequency Mode
Category of Experiment	Wave Propagation
Experiment Description	1
carrier frequencies of	mits phase-coherent continuous waves at 40.016 MHz, 140.056 MHz, and 360.144 MHz and frequencies of 40.11604 MHz, 41.0164 MH
141.0564 MHz, 360.2440	4 MHz and 361.1444 MHz. The phase and
amplitude of the right	and left-hand circular polarized waves are f different ground stations and inter-
compared so as to prov	ide a measure of (1) the total columnar
electron content from	the satellite to the ground station, (2)
the Faraday rotation, content to an altitude	which is used to determine the ionospheric of about 2000 Km, (3) the plasmaspheri
content above 2000 Km,	and (4) amplitude and phase scintillations
	entre. On the particular term of the control of the
Report Accession Nos.	590, 766, 910
User Form Nos. 012,	2=0.35
Similar Experiment No:	
amittat myhattiilette 1409	
Primary Keywords:	
	Wave Propagation, ATS-6, Scintillations
Secondary Keywords:	Ionosphere Faraday Effect
	Polarized Electromagnetic Radiation

2-99

Radio Beacons

Begin Date <u>Ja</u>	n 1974	Completion _	July 1975		
Experimenter			:		
Geographic Loca	-				
Satellite ID			Mode	-	
Category of Exp	V And Jun	Satellite Contr	01		
Experiment Desc				s a precision 3	
one of the two channel by tim transmitter presents (e.g., utilizing two time multiplex	available e multiplex ovided 2-ax a Polaris uplink tran ed uplink t	parated ground frequency chan ting. For 3-ax is attitude (paracker) proving and term and term ansmitters, the ATS-6 spacecra	nels or shar: is control, k itch and roll ding yaw att; he Earth sens he interferor	ing a single one uplink l) with other itude, By sor or three meter also	
frequencies we spaced at 19.9 1.66 λ for the As an attitude ability to pro43 min and proBetter than 10 demonstrated of Earth sensor.	re 6.150 and 5 wavelength coarse bas sensor, the vide stability jected long war a 2-min for longer	ad 6.155 GHz. ths (\lambda) for the seline. The interferomet ization to bet the stability term stability aft position many interval using the selection of th	The receiving vernier base er has demonster than 0.00 y to the order easurement ung the interfentervals, the	strated the 04° for er of 0.01°. ncertainty was erometer and e bias uncertain	
frequencies we spaced at 19.9 1.66 \(\lambda\) for the As an attitude ability to pro43 min and proBetter than 10 demonstrated of Earth sensor. in the Earth s	re 6.150 and 5 wavelength coarse bas sensor, the vide stability jected long war a 2-min for longer	ad 6.155 GHz. ths (\lambda) for the seline. The interferomet ization to bet the stability of the stability of the seline interval using convergence interval interv	The receiving vernier base er has demonster than 0.00 y to the order easurement ung the interfentervals, the	strated the 04° for er of 0.01°. ncertainty was erometer and e bias uncertain	
frequencies we spaced at 19.9 1.66 \(\lambda\) for the As an attitude ability to pro43 min and proBetter than 10 demonstrated of Earth sensor. in the Earth s	re 6.150 and 5 wavelength coarse bas sensor, the vide stability jected long war a 2-min for longer	ad 6.155 GHz. ths (\lambda) for the seline. The interferomet ization to bet the stability of the stability of the seline interval using convergence interval interv	The receiving vernier base er has demonster than 0.00 y to the order easurement ung the interfentervals, the	strated the 04° for er of 0.01°. ncertainty was erometer and e bias uncertain	
frequencies we spaced at 19.9 1.66 \(\lambda\) for the As an attitude ability to pro43 min and proBetter than 10 demonstrated of Earth sensor. in the Earth s	re 6.150 and 5 wavelength coarse bas sensor, the vide stability jected long war a 2-min for longer	ad 6.155 GHz. ths (\lambda) for the seline. The interferomet ization to bet the stability of the stability of the seline interval using convergence interval interv	The receiving vernier base er has demonster than 0.00 y to the order easurement ung the interfentervals, the	strated the 04° for er of 0.01°. ncertainty was erometer and e bias uncertain	
frequencies we spaced at 19.9 1.66 \(\lambda\) for the As an attitude ability to pro43 min and proBetter than 10 demonstrated of Earth sensor. in the Earth s	re 6.150 and 5 wavelength coarse bas sensor, the vide stability jected long war a 2-min for longer	ad 6.155 GHz. ths (\lambda) for the seline. The interferomet ization to bet the stability of the stability of the seline interval using convergence interval interv	The receiving vernier base er has demonster than 0.00 y to the order easurement ung the interfentervals, the	strated the 04° for er of 0.01°. ncertainty was erometer and e bias uncertain	
frequencies we spaced at 19.9 1.66 \(\lambda\) for the As an attitude ability to pro43 min and proBetter than 10 demonstrated of Earth sensor. in the Earth s	re 6.150 am 5 wavelengt coarse bas sensor, th vide stabil jected long -km spacecr ver a 2-min For longer ensor produ	ad 6.155 GHz. ths (\lambda) for the seline. The interferomet ization to bet the stability of the stability of the seline interval using convergence interval interv	The receiving vernier base er has demonster than 0.00 y to the order easurement ung the interfentervals, the	strated the 04° for er of 0.01°. ncertainty was erometer and e bias uncertain	
frequencies we spaced at 19.9 1.66 \(\lambda\) for the As an attitude ability to pro43 min and proBetter than 10 demonstrated of Earth sensor. in the Earth sensor. in the Earth sensor. Report Accession	re 6.150 and 5 wavelength coarse base sensor, the vide stability jected long-km spacecriver a 2-min For longer ensor production.	ad 6.155 GHz. ths (\lambda) for the seline. The interferomet ization to bet y term stability aft position musing convergence ince uncertainti	The receiving vernier base er has demonster than 0.00 y to the order easurement ung the interfentervals, the	strated the 04° for er of 0.01°. ncertainty was erometer and e bias uncertain	
frequencies we spaced at 19.9 1.66 λ for the As an attitude ability to pro43 min and proBetter than 10 demonstrated of Earth sensor. in the Earth sensor. in the Earth sensor.	re 6.150 and 5 wavelength coarse bas sensor, the vide stability jected long was a 2-min for longer ensor production. The sensor production of the	ad 6.155 GHz. ths (\lambda) for the seline. The interferomet ization to bet y term stability aft position musing convergence ince uncertainti	The receiving vernier base er has demonster than 0.00 y to the order easurement ung the interfentervals, the	strated the 04° for er of 0.01°. ncertainty was erometer and e bias uncertain	

Experiment No. 608		
Experiment Title Prop	agation (EUR)	
Begin Date Aug. 1975	Completion	Oct. 1976
Experimenter ESTEC		:
Geographic Location We	stern Europe	
Satellite ID ATS-6	Frequency	Mode
Category of Experiment	Wave Propagation	<u> </u>
Experiment Description		
Various microwave (13 & 1 experiments were performe it was in position for the were coordinated by ESA. involves the transmission transmits it to a large gacquisition system. The the reception and analysiquencies in order to studisphere on their propagati	d on ATS-6 by Euro e SITE experiment. The 13 and 18GHz of data to the sa round station with 20 and 30 GHz expe s of beacon signal y the degrading af	pean scientists while The experiments experiment (COMSAT) tellite, which re- an automatic data riment (MMW) involves s at these fre-
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A was a superior of the supe		
Report Accession Nos.	797, 798, 825	
User Form Nos. None		
Similar Experiment Nos.	244, 245, 609	, 638, 658, CTS-1
Primary Keywords:	Wave Propagation,	Millimeter Wave
Secondary Keywords:	Europe COMSAT	

Experiment No. 609		a
Experiment Title MM	W	
Begin Date June 1974	Completion	7/79
Experimenter NASA/O	SFC	
Geographic Location	u.s.	
Satellite ID ATS-6	Frequency	Mode
Category of Experiment	Wave Propagation	
Experiment Description		
5. Westinghouse Ele 6. Naval Research L 7. NASA/GSFC, Green 8. Virginia Polytec 9. Battelle Laborat 10. Bell Laboratorie 11. U.S. Army, Ft. M	l ground stations in on of rain attenuation of rain attenuation of rain attenuations. Three modes of one, and communicatione, and communication arrow spot beam is vide coverage. Interrupted from Amountain over India consition over India consition over India consition, Texas , Columbus, OH cies, Clarksburg, VA cotric Co., Baltimore aboratory, Waldox, Machine Institute, Blacks, Holmdel, NJ	the U.S. Studies are ion, scintillations, candwidth, and analog of operation are used: ions. The parabolic required and the horn ig. 1975 to Oct. 1976 for the SITE experiment the SITE experiment in the state of the site of
Report Accession Nos.	513, 553, 595, 910	5
wasan man		
User Form Nos.	None	
Similar Experiment Nos	• 244, 245, 608, 6	638. 658. CTS-1
Primary Keywords:	Millimeter Wave, W	ave Propagation
Secondary Keywords:	Rain Attenuation	
	Bandwidth Depolarization	
	Scintillation	

Experiment No. 610
Experiment Title Interferometer
Begin Date June 1974 Completion July 1975
Experimenter NASA/GSFC
Geographic Location U.S.
Satellite ID ATS-6 Frequency Mode
Category of Experiment Satellite Control
Experiment Description
The ATS-6 RF interferometer is utilized primarily as a precision 3-axis attitude sensor having an unambiguous field of view of 35°. This function required two separated ground transmitters, each using one of the two available frequency channels or sharing a single channel by time multiplexing. For 3-axis control, one uplink transmitter provided 2-axis attitude (pitch and roll) with other sensors (e.g., a Polaris tracker) providing yaw attitude. By utilizing two uplink transmitters and the Earth sensor or three time multiplexed uplink transmitters, the interferometer also provided measurements of ATS-6 spacecraft orbit position. Uplink frequencies were 6.150 and 6.155GHz. The receiving antennas were spaced at 19.95 wavelengths (λ) for the vernier baseline and 1.66 λ for the coarse baseline.
As an attitude sensor, the interferometer has demonstrated the ability to provide stabilization to better than 0.004° for 43 min and projected long term stability to the order of 0.01°. Better than 10-km spacecraft position measurement uncertainty was demonstrated over a 2-min interval using the interferometer and Earth sensor. For longer convergence intervals, the bias uncertainties in the Earth sensor produce uncertainties in the orbit less than 80 to 100 km.
Report Accession Nos. 766,864
User Form Nos. None
Similar Experiment Nos. 604, 607
Primary Keywords: ATS-6. Interferometer

,)

Secondary Keywords: IHDRAS, Spacecraft position

Experiment No. 612	
Experiment Title	HET (ARC)
	74 Completion May 1975
Experimenter Univ	ersity of Washington Medical School
	Alaska, Washington
Satellite ID ATS-6	Frequency Mode
Category of Experimen	t Education, Health
Experiment Description	on .
experience gained in cation which started expanding basic scien enrolled in, but not School of Medicine; (teraction in evaluati investigating the vallocated in small comm as a substitute for f coordination and counzation. The UW was 1	-Montana-Idaho (WAMI) ATS-6 experiment built upon an on-going experiment in regional medical eduin 1970. The WAMI experiment focused on: (1) ce instruction to first-year medical students located at, the University of Washington (UW) 2) determining the usefulness of television inng a medical student's clinical progress, and in ue of the satellite for training at clinical unit unities; and (3) exploring the use of television ace-to-face contact in the many administrative, seling activities in a widely dispersed organinaked by ATS-6 to the University of Alaska (UA) c site in Omak, a city of 4,400 in the State
capability. This cap exchange. Three area phase: curriculum, a	of the experiment (between the UW and UA) was n the ATS-6 series which had full, duplex acity came close to approximating a face-to-face s of programming were defined for the university dministration, and patient care. There were e telecasts between the UW and UA.
the UW Medical School Family Medical Center students were at the residents on a rotati cast between the UW a also had three areas	f the experiment involved transmissions between and the Family Medical Center in Omak. The is a small, private-practice group. Medical center in successive six-week periods and student on basis. Thenty, 75-minute segments were telend Omak. The community phase of the experiment of concern: student case presentations, conmedical personnel and medical consultation.
Report Accession Nos.	511, 515, 527, 555, 562, 652, 690, 746,
780, 792, 840, 8	71
User Form Nos. N	one
Similar Experiment No	os. CTS-13
Primary Keywords:	Education, Health
Secondary Keywords:	WAMI, HET Experiments, Alaska University of Washington Medical Education

Telecommunication Teleconsultation 2-104

Experiment No. 612	
Experiment Title H	ET (ARC)
Begin Date Sept. 19	74 Completion May 1975
Experimenter Alask	a Indian Health Service
Geographic Location _	Alaska
Satellite ID ATS-6	Frequency Mode
Category of Experiment	
Experiment Description	
teleconsultation as a health care at the rur were linked by ATS-0 twhere doctors were avaprovided by specialist In-service training ma	ice Experiment explored the feasibility of using means of improving the effectiveness of primary al village site. Two local clinics in Alaska of a regional Service Unit Hospital in Tanana ilable for consultation. Medical support was and other medical personnel in Anchorage. terials for local health aides and health-villagers were also transmitted.
(Tanana Service Unit H and send both audio an Native Health Center i at the University of A in fact, Fairbanks did	ed for this experiment. Three installations ospital and two village clinics) could receive d video. A fourth site was at the Alaska n Fairbanks and was linked to KUAC-TV facilities laska. Fairbanks was a back up for Tanana but not participate in the IHS experiment. Howed in the WAMI experiment.
receive/transmit audio was the coordinating stor, a physician, also necessary and arranged a teleconsultation, the santed the patient for which were not involve be used to transmit billing sounds. Scramble to protect the privacy there were 109, one-ho involved in 323 presen	cal Center in Anchorage received video and . Anchorage monitored all transmissions and ite for the IHS ATS-6 experiment. The coordina participated in the teleconsultations when for the involvement of other specialists. In e primary health-care person at the clinic pre- consultation. The three ATS-6 audio channels d in the basic video/audio transmissions could omedical data including EKG's and heart and rs were used in transmitting teleconsultations of the patients. From Sept. 1974 to May 1975, ur consultations. A total of 245 patients were tations and ten specialists were contacted. 508, 511, 572, 573, 579, 690
User Form Nos. N	one
Similar Experiment Nos	
Primary Keywords:	Health :
Secondary Keywords:	Indian Health Service, HET Experiments, Teleconsultation Tanana Alaska Video Communication

Experiment No. 612	
Experiment Title HET(ARC)	ı
Begin Date Sept. 1974 Completion May 1975	
Experimenter Veteran Administration	,
Geographic Location Appalachia	,
Satellite ID ATS-6 Frequency Mode	
Category of Experiment Health Care	ı
Experiment Description	
During the period from July 10, 1974 to May 19, 1975, 69 programs divided among five types of experimental designs, were broadcast to ten VA hospitals in the Appalachian Region over ATS-6. Each hospital was provided with a telephone linkage to a Denver televistudio where programs originated, so that two-way communication we possible during all broadcasts.	sio:
The goal of the VA/ATS-6 experiment was to compare kinds of communications with various types of audiences. Therefore, many narrow target programs were included in the broadcast schedules, along we programs intended for more general audiences. The audience range extended from patients and their families to the physican-special interested in new diagnostic techniques. The five types of experiments or "events" were: (1) video seminars, (2) grand rounds, (3) out-patient clinics, (4) teleconsultations, and (5) computerized events.	vith ist i-
The video seminars were the most frequent type of program (38) at the best attended. Attendance averaged about 400 per program, at 40 per hospital. For each of the 17 grand rounds, attendance averaged about 182. Although hampered by technological problems, the teleconsultations were enthusiastically received by physiciar and consultants. The average attendance for the ten events was 158. The three out-patient clinics had the highest average attendance (226). The computerized events which were primarily engineering experiments were hampered by technical difficulties. Report Accession Nos. 567, 573, 576, 625, 675, 690, 780, 792	out
Report Receasion nes	
User Form Nos. None	
Similar Experiment Nos. CTS-11	
Primary Keywords: Health	
Secondary Keywords: Veterans Administration, HET Experiment Video Seminars Grand Rounds Out-Patient Clinics Teleconsultation 2-106	: 3 , .

Experiment No. 612		
Experiment Title HET	· (ABC)	
Begin Date Sept. 1974	***	May 1975
Experimenter State of		MEY 17/3
Geographic Location		M-3-
Satellite ID ATS-6		Mode
Category of Experiment	Education	· · · · · · · · · · · · · · · · · · ·
Experiment Description		
systems, the Governor's the development and transprogramming for 14 intermost sites were small is the primary audience. From the primary audience for four to seven-year-order.	Office of Telecomm smission of about sive and four compolated villages in Programs were develong into an oral lacks, a health eductopical "magazine"	150 hours of satellite rehensive sites in Alaska. which Alaska natives were oped in five areas with nguage development course ation series for elementary format series for adults.
and operate an experiment gain technical experience used the experiment as a system and to gain the einformed discussions with	tal satellite comme with which to plan opportunity to desperience necessares potential suppli	
The Alaska education exp Negotiations with the Na resulted in a weekly all lite transmission time.	tional Aeronautics	iminary work in 1972. and Space Administration and 45 minutes of satel-
	na dia kacamatan di Kabupatèn Kabupatèn Kabupatèn Kabupatèn Kabupatèn Kabupatèn Kabupatèn Kabupatèn Kabupatèn Kabupatèn Kabupatèn	
Report Accession Nos	539, 567, 573, 623	8, 688, 689, 690, 832, <u>9</u> 39, 951
User Form Nos. None		
Similar Experiment Nos.	i	
Primary Keywords:	Education	
Secondary Keywords:	HET Experiments Alaska Rural Education Video Communicati	on

Experiment No. 612				
Experiment Title HET				
Begin Date Sept. 1974				
Experimenter Federat				
Geographic Location We				
Satellite ID ATS-6			Mode	
Category of Experiment _	Education			
Experiment Description				
The Satellite Technology to 68 sites in the Rocky were designed and produce tion course; (2) an in-seeducation; and (3) an addisolated, rural communities upplementary or enrichmentary or enrich	Mountain Regind: (1) a jurervice, teacher le evening se les. Existing ent materials ent analysis effo	on. Three of ior high school retraining controls targeted films and to were also to see the STD of the STD of which assort which assort	riginal programs ool career educations in career d for residents apes, selected for send of the conducted an ex- essed audience	s a- of as re-
The STD served eight state of Rocky Mountain States-and Wyomingand two non-	Colorado, Id	laho, Montana	, New Mexico, U	on tah,
Career education was sele of STD programming. This priorities, regional inte Since a review of the car junior high school audier rials, this group was cho	decision was erest, and loc eer education ace was the mo	based on fe cal parent and literature est neglected	deral funding a d teacher inter indicated that in existing ma	gency est. the
There were 68 operational had the capacity to receive and receive live audio for gramming. In addition to selected for installation public television station receive satellite transmit Report Accession Nos.	ve satellite or direct into these 24 "in of "receivens in the eights in	transmission eraction duri- etensive" sit- only" equipm et-state regi- elay to homes	s and to transming educational es, 32 sites we ent. Finally, on were selected.	it pro- re 12
None		Α		
User Form Nos. None	CTS-19			
Similar Experiment Nos.	C13_73			
Primary Keywords: Ec	lucation			
Sa Ca V	ederation of latellite Technareer Education in the Educat	nology Demons on sion	n States, HET E tration (STD)	xperimer

Experiment No. 612	
Experiment Title	ET (ARC)
Begin Date June 1974	
Experimenter Appalac	chian Regional Commission (ARC)
	Appalachia
Satellite ID ATS-6	Frequency Mode
Category of Experiment	Education, College
Experiment Description	
graduate courses and wo the University of Kentu Appalachia. The AESP e satellite communication professors during the h	conal Satellite Program regularly broadcasts orkshops in Education and Health areas from acky to over 45 remote stations throughout emphasizes the "interactive" capabilities of as, and encourages students to talk with their broadcasts. Broadcasts are video & audio one-cudents can talk back via landlines and/or
classes, with the exception of the course monitors representation and out assignments are	TS-6 are conducted like regular college of the professor appears on television. Esent the professor when he/she is off-air, and collect homework. Tests, term papers, proby course specialists at the University of
television stations, ar carriers. They also ha nationwide Public Servi deliver 35 hours of col	ment use of commercial satellites and cable and will eventually switch over to commercial ave plans to expand and become the first are Network in May 1979. The AESP/PSN will alege courses, workshops, and public service erested cable television stations over RCA's
1975 when ATS-6 was mov	re initiated in 1974 and terminated in June yed to India. The satellite returned in lous reasons the AESP program did not re-
Report Accession Nos.	567, 573, 622, 690, 723, 754, 871, 938
User Form Nos. None	<u> </u>
Similar Experiment Nos	
Primary Keywords:	Education, College Education
Secondary Keywords:	HET Experiments Appalachian Regional Commission (ARC) Appalachian Educational Satellite Program (AESP) Appalachia Rural Education

Category of Experiment Data Transmission / Experiment Description ATS-6 was used to control low orbit satell relay command data transmission. The rela normal ground station functions to be perforbit satellites. ATS-6 was also used to satellites so that orbit computations coulaid of multiple ground station tracking.	ite equipment throughy system allowed all formed on the low track near-Earth
Experiment Description ATS-6 was used to control low orbit satell relay command data transmission. The rela normal ground station functions to be perforbit satellites. ATS-6 was also used to satellites so that orbit computations coul	ite equipment throug y system allowed all ormed on the low track near-Earth
ATS-6 was used to control low orbit satell relay command data transmission. The rela normal ground station functions to be perforbit satellites. ATS-6 was also used to satellites so that orbit computations coul	y system allowed all ormed on the low track near-Earth
relay command data transmission. The rela normal ground station functions to be perf orbit satellites. ATS-6 was also used to satellites so that orbit computations coul	y system allowed all ormed on the low track near-Earth
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Report Accession Nos. 766, 865, 874, 902,	911
Jser Form Nos.	
Similar Experiment Nos. 620	
Primary Keywords: ATS-6, Data Transmission,	

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	-6 Frequency	Mode
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Mestweue neactib	CTOU	
atellites. A cont of the last	nstant envelope televi ATS-6 Earth coverage h he 9-m antenna to a lo The experiment demonst dio can be received by Predetection bandwidt on's rule can be utili	chnology of broadcasting sion FM signal was transmitted com and retransmitted at ex-cost direct-readout rated that high-quality r low-cost direct-receive chs significantly less than zed with minimal degradation Two separate techniques of the demonstrated to be
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	cost applications.	
litable for low-o		

Experiment Title GEOS-C Begin Date September 1974 Completion July 1979 Experimenter NASA/GSFC Geographic Location North & South America Satellite ID ATS-6 Frequency Mode Category of Experiment Data Transmission Experiment Description ATS-6 was used to control low orbit satellite equipment through relay command data transmission. The relay system allowed all normal ground station functions to be performed on the low orbit satellites. ATS-6 was also used to track near-Earth satellites so that orbit computations could be made without the aid of multiple ground station tracking. Report Accession Nos. 766, 865 User Form Nos. Similar Experiment Nos. 617 Primary Keywords: ATS-6, Data Transmission, Ranging	Experiment No. 620		en e
Experimenter NASA/GSFC Geographic Location North & South America Satellite ID ATS-6 Frequency Mode Category of Experiment Data Transmission Experiment Description ATS-6 was used to control low orbit satellite equipment through relay command data transmission. The relay system allowed all normal ground station functions to be performed on the low orbit satellites. ATS-6 was also used to track near-Earth satellites so that orbit computations could be made without that do find multiple ground station tracking. Report Accession Nos. 766, 865 User Form Nos. Similar Experiment Nos. 617	Experiment Title GEOS-C		
Geographic Location North & South America Satellite ID ATS-6 Frequency Mode Category of Experiment Data Transmission Experiment Description ATS-6 was used to control low orbit satellite equipment througelay command data transmission. The relay system allowed all normal ground station functions to be performed on the low orbit satellites. ATS-6 was also used to track near-Earth satellites so that orbit computations could be made without the satellites of multiple ground station tracking. Report Accession Nos. 766, 865 User Form Nos. Similar Experiment Nos. 617	Begin Date September 197	4 Completion	July 1979
Satellite ID ATS-6 Frequency Mode Category of Experiment Data Transmission Experiment Description ATS-6 was used to control low orbit satellite equipment throuse relay command data transmission. The relay system allowed all normal ground station functions to be performed on the low orbit satellites. ATS-6 was also used to track near-Earth satellites so that orbit computations could be made without the satellites of multiple ground station tracking. Report Accession Nos. 766, 865 User Form Nos. Similar Experiment Nos. 617	Experimenter NASA/GSFC		
Category of Experiment Data Transmission Experiment Description ATS-6 was used to control low orbit satellite equipment througeness command data transmission. The relay system allowed all normal ground station functions to be performed on the low orbit satellites. ATS-6 was also used to track near-Earth satellites so that orbit computations could be made without the said of multiple ground station tracking. Report Accession Nos. 766, 865 User Form Nos. Similar Experiment Nos. 617			
Experiment Description ATS-6 was used to control low orbit satellite equipment throu relay command data transmission. The relay system allowed al normal ground station functions to be performed on the low orbit satellites. ATS-6 was also used to track near-Earth satellites so that orbit computations could be made without the aid of multiple ground station tracking. Report Accession Nos	Satellite ID ATS-6	Frequency	Mode
ATS-6 was used to control low orbit satellite equipment throurelay command data transmission. The relay system allowed all normal ground station functions to be performed on the low orbit satellites. ATS-6 was also used to track near-Earth satellites so that orbit computations could be made without that of multiple ground station tracking. Report Accession Nos. 766, 865 User Form Nos. Similar Experiment Nos. 617	Category of Experiment	Data Transmissio	on
relay command data transmission. The relay system allowed all normal ground station functions to be performed on the low orbit satellites. ATS-6 was also used to track near-Earth satellites so that orbit computations could be made without the aid of multiple ground station tracking. Report Accession Nos	Experiment Description		
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Phase differences between L-Band and CW signals received at widely separated ground stations were used to measure phase spatial correlation. Two receivers were used, each being made up of a 4-ft. dish (RCP), a low noise amplifier, mixer, IF amplifier (42 MHz center frequency) and a buffer which serves as a line driver for the cables carrying the IF signals. Common local oscillator power at 1508 MHz was piped to the receivers by low loss cables each extending up to 500 ft. The IF outputs were fed into a vector voltmeter which measured the phase difference between the two CW signals. Hard copies of the result were made with a paper chart recorder.	gin Date <u>August 1976</u>		<u> </u>		of Conton
Attegory of Experiment Broadcasting reperiment Description Phase differences between L-Band and CW signals received at widely separated ground stations were used to measure phase spatial correlation. Two receivers were used, each being made up of a 4-ft. dish (RCP), a low noise amplifier, mixer, IF amplifier (42 MHz center frequency) and a buffer which serves as a line driver for the cables carrying the IF signals. Common local oscillator power at 1508 MHz was piped to the receivers by low loss cables each extending up to 500 ft. The IF outputs were fed into a vector voltmeter which measured the phase difference between the two CW signals. Hard copies of the result were made with a paper chart recorder. Seport Accession Nos. None			unication	s kesearch	Center
Experiment Description Phase differences between L-Band and CW signals received at widely separated ground stations were used to measure phase spatial correlation. Two receivers were used, each being made up of a 4-ft dish (RCP), a low noise amplifier, mixer, IF amplifier (42 MHz center frequency) and a buffer which serves as a line driver for the cables carrying the IF signals. Common local oscillator power at 1508 MHz was piped to the receivers by low loss cables each extending up to 500 ft. The IF outputs were fed into a vector voltmeter which measured the phase difference between the two CW signals. Hard copies of the result were made with a paper chart recorder.	\			Mode	
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sport Accession Nos. None Ser Form Nos. 2-028	separated ground stations relation. Two receivers we dish (RCP), a low noise and center frequency) and a buthe cables carrying the IR power at 1508 MHz was pipe each extending up to 500 for vector voltmeter which means the two CW signals. Hard	were used to vere used, end iffer, minimum of the rest. The IF asured the property of the prop	co measure each being exer, IF as serves as Common lo eceivers be outputs we chase diff	phase spandade up of made up of mplifier (a line drag oscilla oscilla y low loss ere fed in erence bet	tial cor- of a 4-ft. (42 MHz river for lator s cables nto a :ween
ser Form Nos. 2-028	a paper chart recorder.				
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ser Form Nos. 2-028 imilar Experiment Nos.		2			· ·
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Experiment No. 631		
	conmental Measurements Exp (EME)	
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Completion January 1977	
Experimenter NASA/GSFC		
Geographic LocationU.		
Satellite ID ATS-6	Frequency Mode	
Category of Experiment _	Scientific	
Experiment Description		
group of eight experiments study the spacecraft er to gain information on Six of the experiments particles of several did A seventh experiment is used in conjunction with determine the dynamic porbit environment. The previous ATS engineering the support equipment is data word commands from 78 EME commands and a feet to the support of the support equipment is data word commands and a feet to the support equipment is data word commands and a feet to the support equipment is data word commands and a feet to the support equipment is data word commands and a feet to the support equipment is data word commands and a feet to the support equipment is data word commands and a feet to the support equipment is data.	ents carried on board the ATS-6 to ents carried on board the ATS-6 to environment at synchronous altitude and electromagnetic-ionospheric interactions. are designed to obtain data on charged afferent types and over wide energy ranges. It is to provide magnetic field data, to be the charged particle measurements to processes which take place in the synchronomy eights experiment is a continuation of any studies into solar cell degradation. Includes a command decoder that accepts the experiment is a continuation of the synchronomy of the syn	us g
data and formats it intwith synch words and cl	to an 1800 bit/sec sequence complete	
Report Accession Nos. 70	<u>86, 884, 885, 886, 887, 888, 889, 890,</u> 891,	909
User Form Nos.		
Similar Experiment Nos.		
Secondary Keywords: Ener	Magnetosphere, EME, Satellite Environment rgetic Particles, Electron-Proton Spectrome mic Rays	ter,

Segin Date <u>March 1975</u> Completi Experimenter <u>COMSAT Laboratories</u>	
Geographic Location Europe	
Satellite ID ATS-6 Frequency	Mode
Category of Experiment Wave Propag	ation
Experiment Description	
In June 1975, ATS-6 was moved into for India. During this period the various microwave experiments calle (13 & 18 GHz) and the millimeter wa For the COMSAT experiment, ESA oper stations located in several Europea problems limited data collection by Comsat Labs was responsible for the	satellite was used for d the COMSAT experiment ve experiment (20 & 30 GHz) ated the ground transmitting n countries. Power supply about 10 hours per day.
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ser Fo	rm Nos	s	None							
4-49	Fxper	imen	t Nos		-					

Experiment No. 647	
xperiment Title SITE (Satellite Instructional T	
egin Date Aug. 1975 Completion Aug. 197	6
xperimenter Government of India	
eographic Location India	
	de
ategory of Experiment Broadcasting	
experiment Description	
The Satellite Instructional Television Experiment (S) when the ATS-6 was moved to orbit over India for a yerograms developed in India on family planning, agricationalism were broadcast daily to approximately 24 villages. The purpose was to evaluate the effect of moting rural development.	ear. Special culture, and 00 rural
ome programming was directed at teachers of primary mprove teaching methods.	grades to help
en de la composition de la composition La composition de la	
Report Accession Nos. 255, 532, 538, 597, 706, 83	1, 826, 896
ser Form Nos. None	
Similar Experiment Nos.	
Primary Keywords: Broadcasting, Program Evalue	ition
Secondary Keywords: India, Education,	
SITE	
Rural Areas	

Segin Date <u>1</u> Experimenter _		Com	pletion	10 Ju	ne 1975		
Geographic Loca							
Satellite ID		Freque	ncy		Mode):	
Category of Exp	eriment _	Scient	ific				
Experiment Desc	ription	•					
Classified Expe	riment						
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Report Accession	on Nos.	None					
Jser Form Nos.	None	:					
Similar Experi							

Experiment No. 650
Experiment Title Magnetometer Data Collection Platform (UCLA)
Begin Date May 1975 Completion August 1976
Experimenter UCLA P.J. Coleman
Geographic Location U.S.
Satellite ID ATS-6 Frequency Mode
Category of Experiment Scientific
Experiment Description
Properties of the magnetosphere.
Important phenomena which can be monitored with a magnetometer on a satellite in synchronous orbit can be divided into two classes: changes due to macroscopic current systems, and hydromagnetic waves. The first class includes the magnetopause boundary currents, the ring current, the tail current, and field aligned currents coupling the magnetospheric plasma to the ionosphere. The second class includes a variety of ULF wave phenomena about whose generation very little is presently known.
The primary objective of the University of California at Los Angeles' (UCLA) fluxgate magnetometer on Applications Technology Satellite-6 (ATS-6) is to add a body of empirical data pertaining to the magnetic field at synchronous orbit. A secondary objective is to monitor continuously this field in order to provide input data for models of the time-varying configuration of the magnetosphere. Specific goals within the primary objective concern the properties of the magnetosheath; the properties of the magnetopause; the interaction of the solar wind with the dayside magnetosphere and the geomagnetic tail; the changes in field caused by magnetospheric substorms; the development of the ring current; and the properties of hydromagnetic waves in these various regions of space.
Report Accession Nos. 884, 891
User Form Nos.
Similar Experiment Nos. 631
Primary Keywords: Magnetosphere, Fluxgate Magnetometer
Secondary Zormowie (ICLA Destruptions FMF

Experiment No. 657
Experiment Title CRC
Begin Date September 1974 Completion August 1977
Experimenter Communications Research Center
Geographic Location Ontario, Canada
Satellite ID ATS-6 Frequency C,L, UHF Mode
Category of Experiment Air Traffic Control, Data Transmission
Experiment Description
The CRC used the ATS-6 for the following experiments: (a) this was a multi-frequency experiment which measured direct path fading at VHF, L-band, C-band, and MMW, and measured reflection coefficients at VHF and L-band for vertical, horizontal and circular polarizations; (b) two implementations of a DECPSK data modem were operated in an aeronautical satellite environment to evaluate effect of specular and diffuse multipath on bit error rate performance. The modem bit rates used were 1200 and 2400 bps; (c) four representative voice modulation techniques, narrow band frequency modulation, delta modulation, pulse duration modulation and a zero-crossing (band limiting) PSK technique were evaluated in airborne trials using MRT and PB work list scales under varying conditions of ocean multipath and
carrier-to-noise density ratios in the range 40 to 49 dB-Hz; (d) the performance of two types of aircraft antenna systems was evaluated. One was a system of low gain antennas requiring three elements located on the aircraft, the optimum being switch selected, and the second was a 9 element linear phased array with automatic beam steering.
Report Accession Nos. 549, 552, 686, 687, 734, 775, 776, 777, 778, 779
User Form Nos. 2-030, 2-031, 2-032
Similar Experiment Nos.
Primary Keywords: Air Traffic Control, Data Transmission
Secondary Keywords: Frequency, Millimeter Wave, L-Band, Communication Research Center, C-Band, Canada, Fading, UHF

Begin Date June 19	974	Completion	1975		-		
Experimenter COMSAT LABS							
Geographic Location	· · · · · · · · · · · · · · · · · · ·	rn U.S.					
Satellite ID ATS-		requency	Mod	le	•		
Category of Experim	ment Wa	ave Propagation	on				
Experiment Descript	:ion						
The ATS-6 Comsat Prostatistical data on These data will be offuture communication 10 GHz. The expering ground transmitters transmit to the ATS-to frequencies around comsat large horn as	attenuat: used to de ns satell: ment used at twent; -6. The A nd 4150 Mi	ion caused by etermine systems of the systems of 25, 18 GHz, a y-five location ATS-6 transports and transmit	rain and sneem design parenting at and 15, 13 Grant on the ender convertits these simples.	ow at 13 and rameters for frequencies Hz unattende astern US to the carriegnals to the	l 18 GE above d rs		
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Report Accession No							
Report Accession No	s. <u>594</u>						
	s. 594						
Report Accession No User Form Nos. Similar Experiment	ome ,	245 608 60	19. 638 Cmc				

Experiment No. 660	
Experiment Title PLU	7
Begin Date Jan. 1976	Completion 7/79
Experimenter Project Lo	ok-up, International Christian Broadcasters
Geographic LocationI	atin America, Puerto Rico
	Frequency Mode
Category of Experiment _	Broadcasting
Experiment Description	
libraries, and religious weeks most programming wi of the experiment about he Puerto Rico and the Virgi uplink facilities at Rosm the ATS-6. Programs are Islands and received by go broadcast through cable s materials so that PLU will a controlled manner. A departicipants in the cours	education groups. For the first thirteen all be contracted. For the subsequent time alf of the programs will be created in Islands. Tapes are shipped to NASA's man, North Carolina for transmission to beamed to Puerto Rico and the Virgin ground receivers for group viewing of resystems. Programs are accompanied by work to be able to interact with respondents in liploma of recognition will be provided the mess. The experiment is being monitored and to indicate behaviorial change in the
concret growps.	
Daniel Languign Was	764
Report Accession Nos	704
User Form Nos. None	
	331
Similar Experiment Nos.	331
Duingwey Varmande	Prophagating
Primary Keywords:	Broadcasting Foundation Foundation
Secondary Keywords:	Education, Health Puerto Rico , Christian Broadcasters U.S. Virgin Islands , Culture

Experiment No				
Experiment Title				
Begin Date Septe				
Experimenter PS		ce Sătellite Co	onsortium)	
Geographic Location				
Satellite ID ATS		7	_ Mode	
Category of Experi		sting		·
Experiment Descrip	tion			
ALFE (Alaska Feed to deliver public fashion. PBS prog Broadcast Network from RMPBN which i Receive sites in A and station KUAC i	broadcast progra rams are deliver (RMPBN) in Denve s co-located wit laska are locate	mming to Alaska ed to the Rocky r; ATS-6 trans h the PSSC Deny	an audiences i y Mountain Pub missions origi yer facility.	n a time lic nate
The ALFE experimen moved from an expetime, the WESTAR sprogramming to ove	rimental to reguystem was employ	lar-operations ed to deliver p	mode; at that public broadca	st
	•			
	•			
	4			
Report Accession N	os. <u>922</u>			**************************************
User Form Nos.	ed.			
Similar Experiment	Nos. 672			
Primary Keywords:	Broadcasting, Vi	deo Transmissio	n	

Secondary Keywords: Alaska, PSSC, ATS-6

Experiment No. 663		
Experiment TitleUW	I	
Begin Date Oct. 1978	Completion	7/79
Experimenter Agency	for International	Development (AID)
Geographic Location	West Indies	
Satellite ID ATS-6	Frequency	Mode
Category of Experiment	Education, Bro	padcasting
Experiment Description		Ŵ
Broadcast educational pr	rograms to citizer	s in the West Indies.
One-way video and two-way	ay audio.	
		and the second s
Report Accession Nos		
User Form Nos.	None	
Similar Experiment Nos.	333	
Primary Keywords:	Education, Broa	dcasting
Secondary Keywords:	West Indies Adult Education	
	AID	

Experiment No. 664		•
Experiment Title SA	R (L-Band C/O)	
Begin Date Aug. 1974	Completion	Apr. 1975
Experimenter DOT/TSC/	FAA/Boeing/USCG/Car	nada/ESA
Geographic Location	North Atlantic/U.S.	.A
Satellite ID ATS-6		Mode
Category of Experiment	Air Traffic Contr	<u>rol</u>
Experiment Description		
This experiment number was sea communications.	as used for several	experiments in air and
In one, DOT/TSC collected avionics hardware designs voice and data communicate aeronautical satellite syadvanced system concepts States (CONUS).	s, and performed pr tions demonstration ystem for oceanic a	n tests in support of an airspace (AEROSAT), and
way ranging was accomplis	ast Guard cutter an rimental antennae. shed using a variet ovided for both voi	nd the NASA Rosman earth Communications and one- cy of modems. The ce and data transmission,
	<u>0</u>	
Report Accession Nos	549, 552, 670, 686	<u>6, 687, 734, 777, 778,</u> 844
User Form Nos. 2-014	, 2-020	
Similar Experiment Nos.	265, 605, 657	
Primary Keywords:	Air Traffic Control	
Secondary Keywords:	Atlantic Ocean, Book-Band, Aircraft Ar	ntenna

Experiment	No. 666	5					
Experiment							•
Begin Date	1			on May	1978		
Experimente						Research	Laboratory
Geographic	Location	n U.S.					
Satellite 1	ID ATS-	5	Frequency _	· · · · · · · · · · · · · · · · · · ·	Mode		
Category of	Experi	ment	Radar				_
Experiment	Descrip	tion		:			
receiving of	equipmen f satell	t in a s ite bist	ATS-6 UHF ystem for d atic radar. nt is class	emonstrati The prin	ng the	capabilit	ies and
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en e	e de la companya de La companya de la co			i de mandrada de mandrada Caregoria	e mai ma Sin ma		
Report Acce	ession No	os. No	ne				
infact a 1900						*	
User Form N	ios.				1. 2. 24	· · · · · · · · · · · · · · · · · · ·	
Similar Exp	-	Nos.					
Primary Key							

Experiment No. 667				
Experiment Title ALVA (Alaska/Veterans Admi	nistration Experim	ment)		
Begin Date September 1977 Completion Jul				
Experimenter PSSC (Public Service Satellite	······································			
Geographic Location Alaska/Western U.S.				
Satellite ID ATS-6, CTS Frequency	Mode			
Category of Experiment Health/Education				
Experiment Description				
ALVA (Alaska/Veterans Administration Experiment). Utilizing both ATS-6 and CTS, the ALVA Experiment is able to link the Alaska Area Native Health Service (AAHS) at Anchorage with the Veterans Administ CTS Experiment. The Denver facility provides the interconnect capability between the ATS-6 and CTS.				
The Veterans Administration has established a which is examining biomedical applications or network is being utilized in a health/communitation to determine future applications for in this area of medical information exchange of the VETSAT network consists of a mobile early of transmitting video and audio to thirty real at VA hospitals in the western United States.	n CTS; this VETSAT ications experiment satellite community of the ground system of the station capable ceive sites located	c ications em Le		
	•			
Report Accession Nos. 922				
Report Accession Nos. 922 User Form Nos.				

Secondary Keywords: Alaska, VETSAT, Veterans Administration, Medical Information

Experiment No. 668	_		
Experiment Title Moto	rola		,
Begin Date July 1977	Completion S	September 1978	
Experimenter RF Syste	ms Lab/Motorola, Inc	, Schaumburg, IL	60196
Geographic Location	J.S.		
Satellite ID ATS-6	Frequency	Mode	-
Category of Experiment	Communication, V	Nave Propagation	
Experiment Description			
Excess path loss over F case as a function of (3) link frequency, (4) An excess path loss mod of temporal/spatial cov was characterized through	(1) local environments satellite elevation lel was developed from the scale of the	t, (2) vehicle head n angle, and (5) so om the data for pro signal behavior	ding, treet side ediction
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			andra de la companya de la companya La companya de la co
Report Accession Nos.		<u>.</u>	
		1	
User Form Nos.			
Similar Experiment Nos.	•		
Primary Keywords: ATS-	6, Excess Path Loss	, Land-Mobile	
Secondary Keywords: Li	nk Frequency, Fade I		havior

Experiment No. 670
Experiment Title TEAM
Begin Date Sept. 1977 Completion 7/79
Experimenter Montana State University
Geographic Location Montana
Satellite ID ATS-6 Frequency Mode
Category of Experiment Education
Experiment Description
Televised Education Applied to Montana (TEAM) is an experiment to determine the feasibility of using satellites to conduct educational programs in sparsely populated areas. The experiment has not started because of the need for funding to buy ground terminals for two-way video programming.
Report Accession Nos. None
Report Accession Nos. None
User Form Nos. 2-008
Similar Experiment Nos. 330, 612
Primary Keywords: Education, Adult Education
Secondary Keywords: Montana State University Tele-Education Agriculture

Experiment No. 671
Experiment Title MSH
Begin Date Mar. 1976 Completion 1978
Experimenter Mountain States Health Corp. (MSHC)
Geographic Location Rocky Mts.
Satellite ID ATS-6 Frequency Mode
Category of Experiment Health Service
Experiment Description
MSHC (Mountain States Health Corporation Experiment). The MSHC Experiment utilized the ATS-6 to disseminate refresher training materials to emergency medical technicians in Montana. The Emergency Medical Training (EMT) refresher course developed by MSHC, concentrated on the upgrading of skills of EMT's as well as critical-care nurses and emergency room support personnel. The ATS-6 receive site for the MSHC experiment was located at the Flathead Valley Community College in Kalispell, Montana. Transmissions took place from the Rocky Mountain Public Broadcast Network and the PSSC Denver facility.
and the second of the second o
Report Accession Nos. 922
User Form Nos. 2-004
Similar Experiment Nos.
Primary Keywords: Health, Education
Secondary Keywords: Emergency Medical Training
Rocky Mountain

2-131

Experiment No. 672	
Experiment Title SAMFE (Samoa	
Begin Date <u>September 1977</u> Co	
Experimenter PSSC (Public Service)	
Geographic Location <u>Pacific</u>	
Satellite ID ATS- 366 Frequency	
Category of Experiment Broad	deasting
Experiment Description	
delivery of public broadcast prospersion KVZ broadcast programming was avail	K. Previous to the experiment, public able to Samoan audiences through the ceived as much as two weeks later
•	
Report Accession Nos. 922	
User Form Nos.	
Similar Experiment Nos. 340,	661
	, Video Transmission C, Programming

Experiment No. 673		
Experiment Title NIE ()	Mational Institute	for Education/DHEW)
Begin Date January 1978	Completion	July 1979
Experimenter Appalachia		
Geographic Location App	· · · · · · · · · · · · · · · · · · ·	
Satellite ID ATS-6	Frequency	Mode
Category of Experiment		
Experiment Description		
Appalachian area of the the summer of 1975, ATS-6 was interrupted. ATS-6 its satellite program. Swere primarily at the graplanning phase that took	J.S. This was part was moved to Indiceturned in the sum the education cours aduate level and we place while ATS-6 activities, video	nmer of 1976 and ARC renewed ses offered after 1976 ere an outgrowth of the was over India. The otapes, and teleconferences
77076 A78 CHC 1110 A1	•	
en e		
en e		
Report Accession Nos. 7	70, 814, 823	
User Form Nos.		
Similar Experiment Nos.	612	
Primary Keywords: ATS-6, Secondary Keywords: Appa		nal Commission, Education Telecommunications

Experiment No. 674	
Experiment Title GE L-Band	
Begin Date December 1977 Completion July 1979	
Experimenter General Electric Co., Schenectady, N.Y. 12301	
Geographic Location Eastern U.S.	
Satellite ID ATS-6 Frequency Mode	
Category of Experiment Communications, Ranging	
Experiment Description	
(1) Equip five over-the-road trucks and a dispatch base station with voice communications by satellite. Trucking company is Smith Transferstaunton, VA. Area served is Georgia to Pennsylvania, west to Nebraska. Experiment control and data recording are at GE Observator near Schenectady, NY. Experiment modified to equip two search and rescue jeeps of Air Force for use in simulated and actual disaster reand search and rescue missions. (NASS-24365, 12/77-8/79)	er, Fy
(2) Test a new GE concept that requires only one active ranging-communication satellite. A ship on the Great Lakes or an inland waterway will be equipped with a mobile communications radio adapted for ATS-6 and a tone-code ranging responder. The ship will also carry a receiver for timing signals from the NOAA GOES satellite when the ship is interrogated via ATS-6, its response will include timing information derived from the GOES signal. Ship positions will be computed at GE's Radio Optical Observatory. (NASS-25135, 12/78-16)	l
Report Accession Nos. No reports at this time.	
User Form Nos. None	
Similar Experiment Nos. 228, 234, 310, 319, 657, 664	
Primary Keywords: ATS-6, Communications, Navigation	

Secondary Keywords: Search and Rescue, GOES, Position, Ranging

Experiment No			
Experiment Ti	tle IHS	(Indian Health Se	ervices)
Begin Date	Sept. 1978	Completion	7/79
Experimenter	Indian H	ealth Services	
Geographic Lo	cation A	laska	
Satellite ID	ATS-6	Frequency	Mod e
The state of the s			. Communications
Experiment De	_		
continuation of in 1974-75. Executed with of in-patients Anchorage over Satcom I. Patcomputer in Tumake their dis	of the work of the clinical two-way vides are sent to ATS-6. Extited the cordinate of the c	done prior to ATS cs at Galena and lee & audio satellio physicians in Tag, X-rays, and vos s can be retrieved na. As the data instruct the health	villages. This is a -6 being moved to India Fort Yukon have been ite hardware. Pictures anana, Bethel, and ice are sent via RCA's d via satellite from a comes in, the doctors th aides in the remote a some cases, doctors
		und and show the	
Seport Access	•	08, 511, 572, 573	, 579, 690, 11, 40, 43,
User Form Nos	. None		
Similar Exper	iment Nos.	227, 300, 612	
	TTTTLL ₹	4	
Primary Keywo Secondary Key	words: O I M T R	ealth, Communicat ndian Health Sorv edicine elemedicine ural Areas Laska	

SECTION 2.3

U.S. CTS EXPERIMENT DATA FORMS

Experiment No. CTS-1
Experiment Title CLCE - Communication Link Characteristic
Begin Date Feb 1976 Completion Open
Experimenter NASA/Goddard, L. Ippolito
Geographic Location GSFC (Maryland, Ohio, Virginia, NC, Texas)
Satellite ID CTS Frequency Mode
Category of Experiment Broadcasting, Technology
Experiment Description
The Communications Link Characterization Experiment (CLCE) was designed to measure and evaluate the effects of the earth-space path environment, both natural and man-made, on the communications links of the Communications Technology Satellite (CTS). Two areas of analysis were considered: propagation effects on the CTS uplinks, downlinks, and the beacon, were measured and evaluated in the Propagation Effects Evaluation portion of the CLCE. The second area of investigation, the Environmental Effects Evaluation, measured and characterized man-made, earth-based signals which could interfere with the 14.0-14.3 gigahertz up-link frequency band of the geostationary CTS.
The potential for interference between users is particularly acute when one of the users is an earth-space uplink, since the received signal at the satellite is very weak and hence sensitive to external transmissions in the same band. A pre-launch survey of known users in the 14.0-14.3 gigahertz band indicated very few potential interferers; measurements with the CTS verified the expected signal levels and validate models developed for the coordination and management of the frequency spectrum for future applications.
Report Accession Nos. 780, 792, 802, 898, 899, 900, 979, 980
User Form Nos. None
Similar Experiment Nos. 244, 245, 608, 609, 638, 658
Primary Keywords: Broadcasting, Technology
Secondary Keywords: Propagation, Environment, CTS

Experiment Title <u>Mobil</u> Begin Date <u>Nov 1978</u>			//
Experimenter NASA/Ames			Section 6
Geographic Location Ca		0	
Satellite ID CTS		Mode	· · · · · · · · · · · · · · · · · · ·
Category of Experiment	······································		Terminal
Experiment Description			
NASA/Ames outfitted a v communications terminal were demonstrated for t van was destroyed by fi	The capabiliti wo groups in 1978	es of this term	minal
A new van (MATE2) is no	w being readied.		
Report Accession Nos.	877		
Jser Form Nos. None			
paer torm Moa. Mous	- ····································		

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Experiment No. CTS-4
Experiment Title College Curriculum Sharing
Begin Date Oct 1976 Completion July 1979
Experimenter NASA/Ames, Stanford University, Carleton University
Geographic Location California, Canada
Satellite ID CTS Frequency Mode
Category of Experiment Education, College
Experiment Description
This was a curriculum-sharing experiment enabling students in one university to take courses in another, thousands of miles away, via satellite. The experiment featured real-time digital video compression with channel error correction coding to reduce transmission bandwidth and power requirements.
Engineering classes and seminars at Stanford University in California were televised to Carleton University 2500 miles away in Ottawa, Canada, and vice-versa. In addition, scientists and engineers at NASA/Ames Research Center, location of the experiment's west coast earth station, engaged in three-way video conferences with the two participating universities.
The communication capabilities permitted operation in two primary modes. One mode allowed classes to be transmitted simultaneously from Stanford to Carleton and from Carleton to Stanford with audio feedback for each class. This was done via a single digital stream in each direction, where the audio was digitized and multiplexed with the digital video. A second mode of operation provided full duplex video for two-way video teleconferencing experiments such as special discussion seminars student counseling, problem sessions.
This experiment demonstrated the economic feasibility of using video relay satellites not only for curriculum sharing, but also for continuing adult and professional education, and for holding conferences without participants having to travel.
Report Accession Nos. 555, 744, 780, 792
User Form Nos. None
Similar Experiment Nos. 612
Primary Keywords: Education
Secondary Keywords: NASA, Digital Systems, Video Transmission, CTS

Experiment No. CTS-6
Experiment Title Transportable Emergency Earth Terminal
Begin Date May 1976 Completion July 1979
Experimenter COMSAT Laboratories, J. Kaiser
Geographic Location Maryland .
Satellite ID CTS Frequency Mode
Category of Experiment Communications, Transportable Terminal
Experiment Description
The COMSAT experiment was designed to demonstrate that a highly transportable small earth terminal can quickly establish reliable communications via the Communications Technology Satellite (CTS) between the site of a disaster and relief and coordination agencies. For this experiment COMSAT fabricated a lightweight earth terminal which can be transported to a disaster area by a small van, helicopter, or even a small boat. The terminal can be set up by two persons and be operational in less than one hour.
The small terminal consisted of an antenna unit with a rugged metalized fiberglass antenna of 1.2 meters (4') diameter mounted on a sturdy, lightweight tripod. Some of the electronics were on the tripod; the remainder were contained in several lightweight boxes. An AC power generator operable on gasoline or liquid propane gas made the terminal completely self-contained. The other end of the communications link consisted of a larger earth terminal using a 4.56 meter (15') diameter antenna mounted on a modified boat trailer. For most parts of the experiment, the terminal was located at the COMSAT Laboratories in Clarksburg. Communications messages were relayed between the terminal at the COMSAT Labs and the American Red Cross Headquarters in Washington, D.C.
Report Accession Nos. 555, 780, 792
User Form Nos. 2-038
Similar Experiment Nos. CTS-4A, CTS-20
Primary Keywords: Communications, Terminals
Secondary Keywords: Test Equipment, COMSAT, CTS

Experiment No. CTS-/
Experiment Title Biomedical Communications
Begin Date Jun 1977 Completion July 1979
Experimenter Lister Hill National Center, E. Henderson
Geographic Location United States
Satellite ID CTS Frequency Mode
Category of Experiment Health Services, Communications
Experiment Description
The Public Health Service (PHS) of the Department of Health, Education and Welfare is conducting a large number of experiments on CTS to explore the potential of satellite communications for solving immediate and future communications needs identified by the health community. The Lister Hill National Center for Biomedical Communications, a component of the National Library of Medicine, is coordinating the health experiments. The experiments under Lister Hill are (1) NCAST (Nursing Child Assessment Satellite Training), (2) Dietitians Workshop (3) Dental Education (4) Drug Prevention (5) Drug Treatment Teleconference (6) MEDLINE Training Seminar (7) Health Teleconferences Seminar (8) WAMI - Faculty sharing and independent learning (9) Research Dissemination (10) Health Curricular
Resource Sharing.
Report Accession Nos. 780, 783, 784, 792, 840, 848, 877
User Form Nos. None
Similar Experiment Nos. CTS-11, CTS-13, CTS-17
Primary Keywords: Health Services, Communications
Secondary Keywords: Telemedicine, Medical Services Lister Hill, Health Education Medical Communications CTS

Experiment No. CTS-11
Experiment Title Health/Communications
Begin Date Oct 1976 Completion July 1979
Experimenter Veteran's Administration, R. Shamaskin
Geographic Location Western United States
Satellite ID CTS Frequency Mode
Category of Experiment Health Services, Communications
Experiment Description
In ATS-6, five categories of types of communications were employed to present selected subjects for target audiences, as appropriate, physicians, nurses, LPNs, nursing assistants, patients, and families of patients. They were: Grand Rounds; Video Seminars; Computer Assisted Instruction; Outpatient Clinics for Patients and Families; Teleconsultations - Slow Scan; both black-and-white and color were used for a slow scan or compressed video transmissions.
CTS programs will concentrate in six areas: Teleconsultations; VA National Medical Satellite Journal; Patient Education; Continuing Education for Professionals; Allied Health Programming and Management/Teleconferences.
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Report Accession Nos. 555, 562, 780, 792
Vices Form No.
User Form Nos. 2-040 Similar Experiment Nos. CTS-7, CTS-13, CTS-17
Similar Experiment Nos. CTS-7, CTS-17, CTS-17
Primary Keywords: Health Services, Communications
Secondary Keywords: Medical Communications, Teleconsultation
Teleconferencing, CTS Medical Education, Veterans Administration
Video Transmission

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Experiment No Experiment T		alachian Educ	ational Sa	tellite Pro	ect II
		Comp			:
		chian Regiona	l Commissi	on, H. Morse	3
Geographic L	ocation _	Appalachia			
Satellite ID	CTS	Frequenc	:Y	Mode _	
Category of	Experimen	t Education,	College		
initiated pro 1975 when ATS satellite ret	ogramming 5-6 was mo turned in	tional Satell in 1974. Proved to India late 1976, b	ogramming for the S ut for var	was terminat ITE project. ious reasons	ed in The
MESP II, which the state of the	ch is a co	ontinuation o The status o	f the ATS- f AESP II	6 program, i is presently	s being classifie
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		And the second s		eren University of the State	
Report Acces	sion Nos.	567, 573,	622, 690,	723, 754, 7	80
User Form No	s. None	127			
	· · · · · · · · · · · · · · · · · · ·	os. 286, 612	, CTS-16,	CTS-29	
Similar Expe			the state of		

Experiment No. CTS-13
Experiment Title Communication Support for Decentralized Education
Begin Date Jun 1977 Completion July 1979
Experimenter University of Washington, WAMI Program
Geographic Location Washington, Alaska, Montana
Satellite ID CTS Frequency Mode
Category of Experiment Education, Health Services, College, Medical
Experiment Description
The WAMI experiments investigate the practical use of satellite telecommunications in a program which decentralizes basic medical science education into four state universities and conducts part of the clinical training at fifteen sites in thirteen communities in the Northwest area. The University of Washington School of Medicine is conducting four subexperiments with the faculty and first-year students at universities in Washington, Alaska, and Montana, and with fourth-year students and residents at selected community clinics. A fifth sub-experiment involves state government officials and health care consumers. The specific demonstrations are: (1) continuing education for physicians (2) science education for first year medical students (3) interviewing medical school applicants and providing interactive programs to minority students on career choices (4) patient consultation between doctors at UW Medical Center and doctors in remote areas (5) programs directed at legislators responsible for health care and education decisions.
Report Accession Nos. 511, 515, 527, 562, 565, 652, 690, 746. 780, 792, 877
User Form Nos. None
Similar Experiment Nos. CTS-7, CTS-11, CTS-17
Primary Keywords: Education, Health Services
Secondary Keywords: Telecommunication, Medical Education, Medical Students, Remote Regions, WAMI, Teleconsultation, CTS

Experiment No. CTS-15
Experiment Title Communication in Lieu of Transportation
Begin Date May 1976 Completion July 1979
Experimenter Westinghouse, H. Nunnally
Geographic Location Ohio, Maryland
Satellite ID CTS Frequency Mode
Category of Experiment Communication, Conference
Experiment Description
The prime objective of the Westinghouse experiment is to test the hypothesis that a large geographically dispersed industrial organization can economically use a communications satellite coupled with low-cost earth terminals effectively to exchange information necessary to conduct business by video, audio and hardcopy media as an alternative to personal travel.
The Westinghouse CTS experiment is being conducted in two phases. Phase I (pre-launch) began in mid-1975 and lasted for six months. During this phase, all support equipment and facilities were configured and utilized to simulate actual satellite teleconferencing. Phase II (post-launch) continues the experimentation via CTS, using teleconference rooms designed from data acquired in Phase I.
The Westinghouse earth terminals and CTS will link the Defense and Electronic Systems Center in Baltimore, Maryland to the Aerospace Electrical Division in Lima, Ohio. Each location is equipped with a small earth terminal to send and receive conference video/audio signals. The ground systems will each consist of full-duplex FM analog television transmitting and receiving facilities. The facilities will employ a ten-foot parabolic antenna at Lima and a fifteen-foot antenna at Baltimore.
Report Accession Nos. 780, 792, 829
User Form Nos. None
Similar Experiment Nos. CTS-18, CTS-26
Primary Keywords: Communications, Conferences
Secondary Keywords: Teleconferencing, Westinghouse Electr

Experiment No	o. <u>cts-1</u>	6			
	,	ject Interchan	ıg€		
Begin Date _	Mar 1976	Comp	letion Jun	1978	
Experimenter	Archdi	ocese of San F	rancisco, D	. Green	
Geographic Lo	ocation	California		·	
Satellite ID	CTS	Frequenc	.y	Mode	
Category of	Experimen	t Education,	Teacher		
Experiment De	escription	on	1		
in the disser supported by Elementary ar	mination the U.S. nd Second of telec	Project Intercand diffusion Office of Eduary Education onferencing, Pinitiative and	of validate cation under Act (ESEA).	d innovativ r Title III rchange is	e program of the designed
on solving ed expanding in additional co and principal	ducationa novative ost; faci ls; build	1 problems; prinstructional litate inservi positive tead ational practi	ovide means programs wi ce education her attitude	for initia thout signi n among tea	ting or ficant chers
the developmentencies that	ent of po are prer	as already dem sitive teacher equisite to th onic support s	attitudes de proper de	and teacher	compe-
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Report Access	ion Nos.	555, 562, 70	8, 780, 792		
Jser Form Nos	. 2-027	•			
Similar Exper	iment No	s. <u>CTS-12, C</u>	TS-29		
rimary Keywo	rds: Ed	ucation, Teach	er Education	n	
econdary Key	words:	INTERCHANGE, T	ele-education	on, CTS	

Experiment No. <u>CTS-17</u> Experiment Title <u>Healt</u> Begin Date <u>Pending</u>		
Experimenter Association		
Geographic Location Ro		Decare, Kr. Commen
Satellite ID CTS		Mode
Category of Experiment		Education
Experiment Description		
No information available	•	•
		•
Report Accession Nos.	None	
User Form Nos. None		
Similar Experiment Nos.		
	h Couriess Dire	ation
Primary Keywords: Healt Secondary Keywords: Hea	th Services, Education, C'	

Company Communication Therefore with the control of	twood o, Cali cy ation, ee NASA the thre liforni Lewis mity be nables th Ames ls done lity wi experiment ely use lite to	Conference	through to the standard Span Center in A Headquard Span Using Connecting ddard standard stand	che volved ace arters onnel the g the ation
communication of the communica	cy	Conference	through to nters involved the conter in A Headqua ers personating the rencing to the content of	volved ace arters onnel the g the ation
communication of the communication of the communication of the control of the con	cy cation, eee NASA the thre liforni Lewis mity be nables th Ames ls done lity wi cperimen ely use lite to	Conference	through to nters involved the conter in A Headqua ers personating the rencing to the content of	volved ace arters onnel the g the ation
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Experimenter Southern Educational Communications Association (SECA) Geographic Location Southern U.S. Satellite ID CTS Frequency Mode Category of Experiment Education, Elementary, Secondary Experiment Description The SECA experiment is designed to determine the feasibility of satellite distribution of program material to television broadcast stations for rebroadcast purposes. The program material to be distributed in the course of the experiment is principally oriented for instructional use in elementary and secondary schools, or for evening viewing by an adult audience. Secondary experiments are proposed in exchange of program material over widely scattered regions of the United States and in the distribution of high quality and multichannel audio and radio material. Each of the participating noncommercial television broadcast stations provides at it's own expense a receiving terminal for use during the course of the experiment. The nominal receive terminal consists of a 3.0 meter fiberglass antenna with electronics similar to standard terrestial microwave hardware. The NASA facility in Rosman provides the uplink for the experiment. In later phases of the experiment, it is expected that certain of the receive-only sites be converted to add uplink capability. Report Accession Nos. 555, 562, 780, 792 User Form Nos. 2-043 Similar Experiment Nos. Primary Keywords: Education	Experiment No. CTS-19
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Satellite ID CTS Frequency Mode Category of Experiment Education, Elementary, Secondary Experiment Description The SECA experiment is designed to determine the feasibility of satellite distribution of program material to television broadcast stations for rebroadcast purposes. The program material to be distributed in the course of the experiment is principally oriented for instructional use in elementary and secondary schools, or for evening viewing by an adult audience. Secondary experiments are proposed in exchange of program material over widely scattered regions of the United States and in the distribution of high quality and multichannel audio and radio material. Each of the participating noncommercial television broadcast stations provides at it's own expense a receiving terminal for use during the course of the experiment. The nominal receive terminal consists of a 3,0 meter fiberglass antenna with electronics similar to standard terrestial microwave hardware. The NASA facility in Rosman provides the uplink for the experiment. In later phases of the experiment, it is expected that certain of the receive-only sites be converted to add uplink capability. Report Accession Nos. 555, 562, 780, 792 User Form Nos. 2-043 Similar Experiment Nos. Primary Keywords: Education	Experimenter Southern Educational Communications Association (SECA
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Primary Keywords: Education	User Form Nos. 2-043
Primary Keywords: Education	Similar Experiment Nos.
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$^{\prime\prime}$	Primary Keywords: Education Secondary Keywords: Television, Tele-education, CTS

Experimenter NASA/Goddard & NHK (Broadcasting Corp. of Japan) Geographic Location California, Florida, Ohio, Virginia, Mary Gatellite ID CTS Frequency Mode Category of Experiment Broadcasting, Technology Experiment Description The Advanced Ground Receiving Equipment Experiment is designed to measure and evaluate the performance of relatively low cost ground terminals operating with the CTS under conditions simulating an operational broadcasting satellite system environment. Development of low cost ground receiving equipment has been underway in many countries for some time. In particular, several manufacturers in Japan have developed low cost ground receiving equipment under the guidance of the Technical Resear Laboratories of Nippon Hoso Kyokai (NHK). These equipments
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Satellite (JBS) experimental system which is scheduled to begin Mid-1978. This CTS experiment provided an early opportunite evaluate these earth stations under actual field conditions
o evaluate these earth stations under actual rield conditions
Report Accession Nos. 780, 792
User Form Nos. None
Report Accession Nos. 780, 792 User Form Nos. None Similar Experiment Nos. CTS-4A, CTS-6, CTS-30

Experi	ment No.	CTS-21	·		
Experi	ment Tit	le <u>Publ</u>	ic Service Sa	tellite Expe	riment
Begin	Date Fe	b 1977	Compl	etion <u>July</u>	1979
Experi	menter P	ublic Se	rvice Satelli	lte Consortiv	um (PSSC), R. Mott
Geogra	phic Loc	ation C	olorado	·	1
Satell	ite ID _	CTS	Frequenc	Y	Mode
Catego	ry of Ex	periment	Communicat	cions, Suppor	:t
Experi	ment Des	cription	1		
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Object	ives		•		
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	e PSSC wi ers.	ll provi	de technical	support to p	oublic service
col	llect, pr	ocess, a	op an informand make availancial effects	lable data or	which will organizational,
fir	PSSC winancial endocate	xperimen	tal elements	nizational, to of the CTS v	echnical and work of experimenter

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Report	: Accessi	on Nos.	780, 877		
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	orm Nos.		0		
SIMITS	r Experi	ment Nos			
			munications		
			munications	C-1-1124	<u> </u>

Experiment No. CTS-22
Experiment Title Arctic Ice Information
Begin Date Aug 1976 Completion Sept 1976
Experimenter NASA/Lewis, R. Gedney
Geographic Location Arctic Ocean, Alaska, Ohio
Satellite ID CTS Frequency Mode
Category of Experiment Communication, Support
Experiment Description
The objective of this experiment was to demonstrate the capability and usefulness of providing photographic quality SLAR ice information to a joint military-civilian vessel operations center located at Barrow, Alaska. This ice information was relayed to vessel-barge convoys attempting to resupply both military facilities and commercial oil drilling operations along the Alaskan North Shore.
The SLAR used in this demonstration is a Motorola AN/APS-94C system and it is currently mounted in a U.S. Coast Guard C-130B aircraft. Operating in the X-band at a frequency of 9.245 GHz (3.245 cm wavelength) using a real aperture antenna, this radar transmits and receives horizontally polarized radiation. For SLAR missions this aircraft is flown at an altitude of 3.35 kilometers (11,000 feet) and at an average speed of 280 knots. Refer to NASA TMS-71815 for more details.
Data was transmitted to NASA/LERC where it was analyzed. The results were sent to Barrow via CTS.
Report Accession Nos. 748, 780, 792
User Form Nos. None
Similar Experiment Nos.
Primary Keywords: Communications
Secondary Keywords: Ice, Arctic Ocean, Facsimile, CTS

Experiment No. CTS-24	
Experiment Title Digitally Implemented Communications Exper	iment (DICE)
Begin Date Jun 1977 Completion July 1979	
Experimenter NASA/Lewis & COMSAT, H. Jackson	
Geographic Location Ohio, Maryland	
Satellite ID CTS Frequency Mode	
Category of Experiment Broadcasting, Technology	•
Experiment Description	
The Digitally Implemented Communications Experiment (DICE) i being performed to evaluate the technical and economic possi of using digital compression in video communication links.	
Data are taken on carrier-to-noise and correlated with up- a down-link transmission variables such as weather conditions, antenna location and deployment/configuration of system components. Transmission parameters are recorded at both statio through the test. In addition, information on frequency, transmitter power, bit rate and other pertinent channel parameters is gathered. Picture quality is rated for video compression techniques and error coding as a function of lin parameters.	ns.
	•
Report Accession Nos. 780, 790, 792	
User Form Nos. None	
Similar Experiment Nos.	
	<i>y</i>
Primary Keywords: Broadcasting, Technology	
Secondary Keywords: Communications, Digital Systems, Telecom	munication,

Experiment No. Experiment Tit				^_			41
Segin Date A			Complet			70	
							
Experimenter				GLETCA	, F . Y	1000	
Geographic Loc							
Satellite ID _			equency			_ Mode	
Category of Ex	***		unicatio	ns, co	nierer	ice	
Experiment Des	_				_		· · · · · · · · · · · · · · · · · · ·
This experiment Congressional of by members of (constituents. (2) meetings wi The advantages perceived by the	communication Congress Specification ith constant and disa he partic	tions. to com areas ituent	Videoc municate of appl s and (3 ges of v	onfere with icatio) info ideoco	ncing their n are rmatic	is bei staffs (1) he on retr cing,	ng used and arings ieval. as
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eport Accessio	on Nos.	780,	792, 839				
ser Form Nos.	None		•				
imilar Experi	ment Nos				<u> </u>		
rimary Keyword							

Experiment No. CTS-26
Experiment Title Project ADJUNCT
Begin Date Sep 1977 Completion Feb 1978
Experimenter Satellite Business Systems, C. Rush
Geographic Location <u>Virginia</u>
Satellite ID CTS Frequency Mode
Category of Experiment Data Transmission, Communications
Experiment Description
Project ADJUNCT was set up to use state-of-the-art capabilities available today in order to learn more about the business applications and the equipment capability requirements of tomorrow. The demonstration concentrated on three application areas: data processing, teleconferencing, and document distribution for each area, the impact on operational procedures and business structure due to new communications technology was explored, the technology required to implement possible scenarios examined, and the transitional period between current and future systems investigated. High speed digital communications applications of full motion and freeze-frame video, high speed data transfer, remote high speed retrieval, data processing backup, load leveling-resource sharing, and electronic mail (high speed digital facsimile and high speed communicating word processing) were investigated. Live teleconferences were set up for personnel of participating companies to use as a substitute for travel. Project ADJUNCT works with participating companies to enable them to test electronic mail and data processing capabilities.
Report Accession Nos. 780
User Form Nos. None
Similar Experiment Nos. <u>CTS-15, CTS-18</u>
Primary Keywords: Data Transmission, Communications
Secondary Keywords: Computer Communication, Facsimile, Conferences, Teleconferencing, CTS

Experiment No.	CTS-27			
Experiment Title	Women's S	atellite Serv	ice	
Begin Date Pen	ding	Completion	1	•
Experimenter Na	tional Wome	n's Agenda, J	. Zimmerman	
Geographic Locat	tion <u>Unit</u>	ed States		
Satellite IDC	TS I	Frequency		Mode
Category of Expe	eriment Da	<u>ta Transmissi</u>	on, Communi	cation
Experiment Described The Women's Sate the feasibility ground systems to 100 women's organized to the state of the systems of t	llite Servi of linking o create a	a non-broadca vital informa	st satellit	e with k among over
This experiments women's groups in Los Angeles, How and intra-office facsimile, and of systems would be specifically expected the specifical expected th	in six citiens in six citiens in six citiens in six citiens in communicate computer date two-way. It is computed in the feather in the feather in the six citiens in	es (New York, Trancisco) for ions through a services or Through this asibility of	Washington, both inter audio, tele a schedule project des large scale	Chicago, corganizationa type, d basis. All ign we will audio
		Real Control		
Report Accession	Nos. 780			
Jser Form Nos	None			
Similar Experime	nt wos.			
Primary Keywords Secondary Keywor		asmision, Comm ferencing, Da le, CTS		onferences,

Experiment No. CTS-2	8		
Experiment Title Lon	g Baseline Interfe	rometer	
Begin Date May 1978	Completion	Open	
Experimenter Universi	ty of Illinois, G.	Swenson	
Geographic Location	Western Hemispher	8	
Satellite ID CTS	Frequency	Mode _	
Category of Experiment	Broadcasting,	Technology	
Experiment Description	1		
This experiment will meter to both Astrometry (the cosmic radio sources) of baseline lengths and	illators situated s apart. This has precise measurem and to Geodesy (the	at observatories direct applicat; ent of positions e precise measure	lon of
As the CTS satellite we the on-board oscillator perturbations of the acaused by Doppler shift Hence, it is necessary transmissions and modu. The experiment has been is being analyzed for thought to arise mainly	pparent on-board of the from the motion to employ a complications to cancel on conducted severa the causes of vari	There are further scillator frequents of the satellidex system of two-unwanted phase draws and the cous phase perturb	c ncy ce. way cifts.
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	en e		
Report Accession Nos.			
Report Accession Nos.	192		
Hear Form Nos Nos			
User Form Nos. <u>None</u> Similar Experiment Nos	· ·		
Primary Keywords: Bro		ogy	

Experiment No. CTS-29
Experiment Title University Graduate Level Studies
Begin Date May 1978 Completion May 1979
Experimenter Varian Association. Inc., R. Shulken
Geographic Location Massachusetts, California
Satellite IDCTS Frequency Mode
Category of ExperimentEducation, College
Experiment Description
Varian Associates is using CTS to broadcast graduate level courses from Beverly, Mass. to Palo Alto, CA. The courses are then relayed via microwave to Stanford University in California. The purpose of the experiment is:
1. To determine the feasibility of teaching graduate level courses via real time interactive teleconferencing.
2. To compare the use of real time interactive teleconferencing with delayed videotape lectures.
3. To determine minimum acceptable program quality and class-room furnishings.
4. To derive economic models of operational graduate level interactive university/industry networks.
$ heta=x^{2}$
Report Accession Nos. None
User Form Nos. None
Similar Experiment Nos. CTS-12, CTS-16
Primary Keywords: Education
Secondary Keywords: Teleconferencing, Video Transmission, Stanford

Experiment No. CTS-30
Experiment Title Terminal of Tomorrow
Begin Date Mar 1978 Completion July 1979
Experimenter FCC, I. Galane
Geographic Location Ohio
Satellite IDCTS Frequency Mode
Category of Experiment Broadcasting, Program
Experiment Description
The FCC plans to demonstrate color television transmission on small, relatively simple terminals (Terminals of Tomorrow) at NASA/Lewis Research Center.
The Federal Communications Commission actively participated in the joint United States - Canadian Communications Technology Satellite (CTS/Canadaian "Hermes") experimentation to: (1) evaluate the potential use of small, relatively simple, inexpensive earth receiving terminals for satellite broadcasting, and (2) provide technical guidance to FCC Commissioners and U.S. participants in international conferences.
Originally a subordinate experimenter under the National Aeronautics and Space Administration Goddard Space Flight Center Advanced Ground Receiving Equipment Experiment (AGREE) with the loan of receiving terminals from Japan Broadcasting Corporation (NHK), the FCC receive NASA approval in March 1978 to conduct an independent experiment entitled "Terminals of Tomorrow" (TOT) with terminals from other sources.
The FCC to date has: (1) tested five different small receive-only terminals under a great variety of environmental conditions, thereby acquiring a wealth of operational experience as well as certain concrete experimental results; (2) accomplished the first (insofar as can be determined) actual satellite-to-home television reception; (3) conducted many demonstrations of high power satellite television reception with small earth terminals, notably for FCC Chairman Charles D. Ferris and for members of Congressional and FCC Commissioners' staffs, as also for NHK and other Japanese visitors in advance of the March 1978 launch of the Japanese Broadcast Satellite Experiment (BSE). 847
User Form Nos. None
Similar Experiment Nos. CTS-20
Primary Keywords: Broadcasting

Experiment No. CTS-31	
Experiment Title Three Way Time Transfer	
Begin Date Jan 1979 Completion July 1979	
Experimenter U.S. Naval Observatory	_
Geographic Lucation U.S Canada	_
Satellite ID CTS Frequency Mode	_
Category of Experiment	-
Experiment Description and Principal Investigator	
The only information available is from a CTS user meeting report. A three way time transfer took place between ground stations in Washington D.C., Denver, Colorado and Ottawa, Can	ad
	ji.
Report Accession Nos. 877	_
	_
User Form Nos. None Similar Experiment Nos. CTS-28	-
Primary Keywords: Time Transfer, CTS Secondary Keywords: Naval Observatory, Frequency	-

ATS/CTS EXPERIMENT DATA

Begin Date January 197	e-Band Techniques for		
Experimenter GTE Labor		div 13/3	
Geographic Location			
Satellite ID CTS		Mode	
Category of Experiment			
Experiment Description	and Principal Inves	tigator	
The experiment was com was to evaluate GTE de objective was to perfo of 22nd Users meeting	prised of two parts signed earth terminarm teleconferencing	. The first objective al equipment. The sec	cond
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Report Accession Nos	877		
User Form Nos. None			
	CTS-6, CTS-15, C	TS-18, CTS-30	
gruntar pylerruenc Nos			

ATS/CTS EXPERIMENT DATA

Experiment No. CTS-35			
Experiment Title <u>CT S</u> Begin Date January 19		July 1979	
Experimenter Universi			
Geographic Location We			
Satellite ID _CTS		Mode	
Category of Experiment	7,	S	
Experiment Description			*
The project objectives CT network employing s	were to develop atellites, to eva	terized axial tomography an initial model of a luate linking technology tration on cost effective	,
	• • • • • • • • • • • • • • • • • • •		
	3 0 (1997)		
Report Accession Nos.	877		
User Form Nos. None Similar Experiment Nos. Primary Keywords: CTS,		vork	

SECTION 3 CROSS INDEX FOR ATS/CTS EXPERIMENTS

Nomenclature data for each experiment were entered onto

I.B.M. cards. The data entered were Experiment Number, Experiment

Title, Category of Experiment, Experiment ter, Satellite, Geographic

Locations, Chronology, *Number of Hours.

The cards were then sorted on each of the data fields given above and listed. This section contains these listings of the experiments, each listing utilizing a different sort. The reader can use these listings in a variety of ways. The listings provide a current summary of the uses made of the satellites and therefore gives to the reader a feel for both the variety of uses and the total time each satellite was used. In addition the reader can use these listings to pinpoint activity in a given area of usage. That is, the reader can use these listings to identify all experiments having the same entry in a particular data field. For example, the reader can use the sort under "CAT" to identify all experiments done in a certain category, e.g. education.

^{*}The number of hours was given to us by GSFC from their computer listings and was not part of the original experiment forms.

3.4 Sorted by Experiment Number

ID:	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS	•
CTS-T	TEP/SHF	GRD TERM	NASA/LERC	CTS	OHIO	2/76- OPEN	437	
CTS-01	COMM LINK CHAR	WAVE PROP	NASA/GSFC	CTS	U.S.	2/76-12/77	315	
CTS-01	COMM LINK CHAR	HAVE PROP	OHIO STATE U	CTS	OHIO	2/76-12/77	315	
CTS-01	COMM LINK CHAR	WAVE PROP	VIRGINIA POLY	CTS	VIRGINIA	2/76-12/77	315	
CTS-01	COMM LINK CHAR	WAVE PROP	U. OF TEXAS	CTS	TEXAS	2/76-12/77	315	
CTS-04	COLLEGE CURR	EDUCATION	STANFORD UNIV	CTS	U.S./CANADA	2/76- OPEN	446	
CTS-04	COLLEGE CURR	EDUCATION	CARLETON UNIV	CTS	U-S-/CANADA		446	
CTS-06	TET/COMSAT	GRO TERM	COMSAT LABS	CT.S		2/76- OPEN		
CTS-07	BIONED COMMUN	MEDICAL	LISTER HILL	CTS	U.S. (EAST)	2/76- OPEN	266	
CTS-C7	BIOMED COMMUN	EDUCATION	LISTER HILL		U.S.	6/77 - OPEN	404	
CTS-09	SALINET	EDUCATION	SALINET	CTS	U.S.	6/77- OPEN	404	
CTS-11	HEALTH/COMMUN	MEDICAL		CTS	U.S.	10/77- 4/78	10	
CTS-11	HEALTH/COMMUN	EDUCATION		CTS	U.S.(WEST)	6/77- OPEN	306	
CTS-12	AESP II		VETERANS ADM	CTS	U.S. (METT)	6/77- OPEN	306	
CTS-12	DECENT MED ED	EDUCATION	APP. REG. COMM.	CTS	APPAL STIA	PENDING	Q	
C75-13		HEDICAL	THAM	CTS	ALASKA/WASH	3/77- OPEN	292	
	DECENT HED ED	EDUCATION	WAMI	CTS	ALASKA/WASH	3/77- OPEN	292	
CTS-13	DECENT HED ED	EDUCATION	U OF WASHINGTON	CTS	ALASKA/WASH	3/77- OPEN	292	
CTS-15	TELECONFERENCE	CONFERENCE	WESTINGHOUSE	CTS	U.S.(EAST)	2/76- OPEN	286	
CTS-16	PROJ INTERCHG	EDUCATION	ARCH OF S.F.	CTS	CALIFORNIA	3/76- 6/78	45	
CTS-17	HEALTH ED TV	MEDICAL	ASSOC OF W HOSP	CTS	ROCKY HTNS	/ PENDING	¢	
CTS-17	HEALTH ED TV	EDUCATION	ASSOC OF W HOSP	CTS	RUCKY MTNS	PENDING	0	
CTS-18	INTRANASA COMM	CONFERENCE	NASA/GSFC	CTS	U.S.	5/76~ OPEN	382	
CTS-18	INTRANASA COMM	CONFERENCE	NASA/LERG	CTS	U.S.	5/76- OPEN	382	
CTS-18	INTRANASA COMM	CONFERENCE	NA SA /ARC	CTS	u.s.	5/76- OPEN	362	
CTS-19	SAT. DIST.	DATA TRANS	SECA	CTS	U.S. (BOUTH)	12/76- OPEN	655	
CTS-20	ADV GRD REC EQ	GRO TERM	NASA/GSFC	CTS	· U.S.	4/76- 4/78	87	
CTS=21	PSSC	DEHO	PSSC	CTS	U.S.	2/77- OPEN	274	
CTS-21	PSSC	SUPPORT	PSSC	CTS	u.s.	2/77- OPEN	284	
CTS-22	ICE FLOW	DATA TRANS	NASA/LERC	CTS	ALASKA	8/76- 9/76	.70	
CTS-24	DICE	DATA TRANS	NASA/LERC_	CTS	U.S. (EAST)	6/77- OPEN	131	
CTS+24	DICE	DATA TRANS	COMSAT LABS	CTS	U.S.(EAST)	5/76- OPEN	131	
CTS-25	CONGRESS	CONFERENCE	GEO WASH UNIV	CTS	MARYLAND	4/77- 4/78	39	
CTS-26	PROJ ADJUNCT	CONFERENCE	SAT BUS SYSTEMS	CTS	VIRGINIA	9/77- 2/78	178	
CTS-26	TONULDA LORG	DATA TRANS	SAT BUS SYSTEMS	CTS	VIRGINIA	9/77- 2/78	178	
CTS-27	WOMENS SAT SER	CONFERENCE	NAT WOMENS AG	CTS	ü.S.	PENDING	0	
CTS-28	VLBI	TIME/FREQ	UNIV OF ILL	CTS	U.S./CANADA	5/78-12/78	120	
CTS-29	UNIV GRAD STUDY	EDUCATION	VARIAN ASSOC	CTS	u.s.	5/78-12/78	49	
CTS-30	TER OF TOMORROW	GRD TERM	FCC	CTS	U.S.	3/78-12/78	56	
CTS-31	3 WAY TIME TRAN	TIME/FREQ	U.S. NAVAL OBS.	CTS	U.S./CANADA	1/79- 7/79	8	
CTS-33	WIDE BAND COMM.	CONFERENCE	GTE LABS	CTS	u.s.	1/79- OPEN	6	
CTS-35	CT SCANNING NET	HEDICAL	U. OF COLORADO	CTS	U.S.(WEST)	4/79- 7/79	0	
102	DATA XMISSION	HEDICAL	DUKE U. MED CEN	1	U.S. (EAST)	11/71-11/71	54	
107	SPEC SHE	SUPPORT	GE	1	W. HEMIS.	68- 70	1929	
107	SPEC SHF	SUPPOPT	GE	3	W. HEMIS.	We- 70	1613	
108	LAUNCH SUPPORT	SUPPORT	NASA	1	U.S.	1/67- 1/76	930	
108	LAUNCH SUPPORT	SUPPORT	NASA	3	U.S.	1/67- 5/76	369	
108	LAUNCH SUPPORT	SUPPORT	NASA	5	U.S. :	3/67-10/72	69	
108	LAUNCH SUPPORT	SUPPORT	NASA	6	U.S.	7/77- 2/78	7	
163	WEFAX	METEOR.	NOAA	1	WORLD	3/69- OPEN	5957	
183	WEFAX	DATA TRANS	NOAA	1	WORLD	3/69- OPEN	5957	
183	WEFAX	HETEOP.	NOAA	3	WORLD	3/69- OPEN	3943	
183	WEFAX	DATA TRANS	NOAA	3	HORLD	3/69- OPEN	3943	
105	VHF A/C	A/C COMM	ARINC	1 .	U.S.	1/67- 6/70	264	
185	VHF A/C	A/C COMM	ARING	3	U.S.	1/67- 6/70	308	
202	S/C SUPPORT	SUPPORT	NASA	1	M. HEMIS.	4/69- 70	270	

[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

3.1 Sorted by Experiment Number (Cont.)

	1)21							
IDS	EXP. NAME	CAT	EXPERIMENTEP	SAT	LOCATION	CHRONOLOGY	HRS	
205	SSCC	METEOR.	NOÀÀ	1	WORLD	3/69- OPEN	8372	
205	SSCC	DATA TRANS	NOAA	ī	WORLD	3/49- OPEN	2372	
205	SSCC	HETEOR.	NOAA	3	WORLD	3/69- OPEN	20	
205	SSCC	DATA TRANS	NOAA	3	MORLD	3/69- OPEN	20	
210	HSSCC	DATA TRANS	NOAA	1	WORLD	3/69- 6/72	7	
210	MSSCG	METEOR.	NOAA	ī	WORLD	3/69- 6/72	7	
210	MSSCC	DATA TRANS	NOAA	3	WORLD	3/69- OPEN	26966	
210	HSSCC	METEOR.	NOAA	3	WORLD	3/69- OPEN	26966	
211	IDCS	HETEOR.	NOAA	3	U.S.	11/67-10/72	1050	
211	IDCS	SAT PHOTOS	NOAA	3	U.S.	11/67-10/72	1050	
225	VHF ENGLAND	MARITIME	UNITED KINDSOM	3	ATLANTIC	8/70-12/70	191	
226	VHF NETHERLAND	MARITIME	NETHERLANDS	3	ATLANTIC	8/70-12/71	265	
227	HET ALASKA	EDUCATION	ST. OF ALASKA	1	ALASKA	6/69- OPEN	11314	
227	HET ALASKA	HEDICAL	ST. OF ALASKA	1	ALASKA	6/69- OPEN	11314	
227	HET ALASKA	EDUCATION	NAT EDUC ASSOC	1	H. HEMIS.	6/69- OPEN	11314	
228	VHF GE	DATA TRANS	GE	1	BERMUDA	2/69- 8/71	41	
228	VHF GE	MARITIME	39	1	BERHUDA	2/69- 6/71	41	
228	VHF GE	RANGING	éE .	1	BERHUDA	2/69- 8/71	41	
228	VHF GE	DATA TRANS	6 E	3	BERMUDA	2/69- 8/71	142	
226	VHF GE	MARITIME	GE	3	BERMUDA	2/69- 8/71	142	
224	VHF GE	ranging	GE	3	BERMUDA	2/69- 8/71	142	
520	VHF B/ION	SUPPORT	MAX PLANCK INST	3	W. HEMIS.	3/71- 9/71	176	
53 0	VHF B/ION	SUPPORT	NASA/WALLOPS	3	W. HEHIS.	3/71- 9/71	176	
231	VHF MSFN PROP	WAVE PROP	MSFN NETHORK	. 3	W. HEMIS.	9/70- 2/71	22	
232	VHF EGEG	A/C. COMM	Eete //	1	W. HEMIS.	6/68-10/72	48	
232	VHF EGEG	SUPPORT	E 6 C6	1	M. HEMIS.	6/68-10/72	48	
533	VHF NORWAY	METEOR.	NORWAY	3	N. ATLANTIC	11/70= 2/71	22	
233	VHF NORWAY	RANGING	NORWAY	3	N. ATLANTIC	11/70- 2/71	22	
234	GE/FAA	RANGING	ec.	1	N. ATLANTIC	11/69- 6/71	4	
234	GE/FAA	RANGING	GE	3	N. ATLANTIC	11/69- 6/71	44	
235	VHE HAWAII	EDUCATION	PEACESAT	1	PACIFIC	2/72- OPEN	6942	
235	WHE HAWAII	MEDICAL	PEACESAT	1	PACIFIC	2/72- OPEN	6942	
236	VHF BRAZIL	EDUCATION	STANFORD UNIV	3 ()	W. HEMIS.	2/70- OPEN	38	
238	VHF NBS	TIME/FRED	NAT BUR OF STDS	3	W. HEMIS.	8/71- 8/72	327	
539	VHF VANGUARD	DATA TRANS	USCE	1	ATLANTIC	6/68- 7/69	12	
239	VHF VANGUARD	CONFERENCE	USCE	1	ATLANTIC	6/68- 7/69	12	
239	VHF VANGUARD	DATA TRANS	USCS	3	ATLANTIC	6/60-10/74	. 28	
239	VHF VANGUARD	CONFERENCE	USCG	3	ATLANTIC	6/60-10/74	28	
244	MMW REG 1	WAVE PROP	NASA/GSFC	2	N. AMERICA	8/69- 9/71	1866	
245	MNW REG Z	MAVE PROP	NASA/GSFC	5	N. AMERICA	8/69- 9/71 4/71- 5/71	326	
246	SSRA	RANGING	WESTINGHOUSE USAF/SAMSO	5		7/70- 2/71	: 1 : 88	
247	ALPHA-2	RANGING RANGING	AII	3	ATLANTIC ATLANTIC	7/70- 2/71	88	
248	ALPHA-Z SP L-BAND	DATA TRANS	Äli	5	U.S.	8/74- 4/75	135	
248	SP L-BAND	CONFERENCE	AII	5	U.S.	8/74- 4/75	135	
249	MARAD	DATA TRANS	MARAD	5	W. HEMIS.	3/70-12/71	65	
249	MARAD	MARITINE	MARAD	:5	W. HEMIS.	3/70-12/71	65	
249	MARAD	DATA TRANS	AII	5	W. HEMIS.	3/70-12/71	65	
249	MARAD	MARITIME	AII	5	W. HEMIS.	3/70-12/71	65	
249	MARAD	RANGING	AII	5	W. HEMIS.	3/70-12/71	65	
250	L-BAND RANGING	RANGING	WESTINGHOUSE	1	U.S. (WEST)	2/71- 5/71	6	
250	L-BAND RANGING	RANGING	WESTINGHOUSE	3	U.S.(WEST)	2/71- 5/71	Ü	
- 250	L-BAND RANGING	RANGING	WESTINGHOUSE	5	U.S.(WEST)	2/71- 5/71	99	
251	L-BAND DOT	DATA TRANS	BOEING	3	N. AMERICA	4/74-16/76	128	
251	L-BAND DOT	RANGING	BOEING	5	N. AMERICA	2/71- 7/74	557	
	- Auto Ant	***********	5-2-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-	•	***		3 3,	

^{*} ATS SCHEDULED TIME/CTS ACTUAL TIME

10#	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS	•
252	L-BAND FAA	RANGING	FAA	5	N. AMERICA	4/71- 4/72	275	
252	L-BAND FAA	RANGING	BOEING	5	N. AMERICA	4/71- 4/72	275	
253	SHF VLPI	Tine/Freq	SMITHSONIAN INS	1	U.S.	5/71-10/72	2	
253	SHF VLSI	TIME/FREQ	RADIO RES LAGS	i	JAPAN	1/77- 2/77	5	
253	SHF VLBI	TIME/FREQ	SMITHSONIAN INS	3	U.S.	5/71-10/72	190	
253	SHF VLBI	TIME/FREQ	RADIO RES LAMS	3	JAPAN	1/77- 2/77	190	
253	SHF VLBI	TIME/FREQ	SMITHSONIAN INS	5	U.S.	5/71-10/72	ā	
257	SHF CRC	MAVE PROP	CANADA/CRC	1	CANADA	1/71=12/71	76	
254	SHF SEARCH	LAW ENFORC	PUBLIC SYST INC	1	U.S.	12/71-12/71	6.6	
259	CONSAT C/L PROP	HAVE PROP	COMSAT LABS	5	W. HEMIS.	1/72- 4/72	37	
260	CRC C/L-MAND	HAVE PROP	CANADA	5	CANADA	9/71- 5/72	113	
261	GE L-BAND	RANGING	G€	1	N. AMERICA	6/70-10/72	1	
261	GE L-BAND	RANGING	GE	3 .	N. AMERICA	4/70-10/72	51	
261	GE L-BAND	RANGING	GE ·	5	N. AMERICA	6/70- 6/73	.152	
263	TELESAT	WAVE PROP	TELESAT CANADA	1	CANADA	9/12- 9/72	136	
264	HARAD/AII/PLACE	DATA TRANS	AII	3	HORLD	1/73- OPEN	131	
264	HARAD/AII/PLACE	MARITIME	AII	3	HORLD	1/73- OPEN	131	
264	HARAO/AII/PLACE	DATA TRANS	AIĻ	5	WORLD	1/73- OPEN	712	
264	MARAD/AII/PLACE	MARITIME	AII	5	WORLD	1/73- OPEN	912	
264	MARAD/AII/PLACE	RANGING	AII	5	HORLD	1/73- OPEN	912	
265	VANGUARO	DATA TRANS	USCG	3	ATLANTIC	3/72- 4/73	78	
265	VANGUARD	DATA TRANS	USCG	3	PACIFIC	3/72- 4/73	98	
265	VANGUAPD	RANGING	USCG	5	ATLANTIC	3/72- 4/73	535	
265	VANGUARD	ranging	USCG	5	PAGIFĮC	3/72- 4/73	232	
266	L-BAND TRILAT	rangiyg	GE	1	U-S:- \	1/74- 1/76	19	
268	L-BAND TRILAT	RANGING	GE .	- 3	U-S-	1/74= 1/76	98	
266	L-SAND TRILAT	RANGING	6E	5	U-S.	1/74- 1/76	172	
281	LOS ALAHOS	A/G COMM	EGEG	1	M. HEMIS.	10/70-10/71	265	
282	VHF NLM	HEDICAL	LISTER HILL	1	U-S-(N-U-)	10/71- OPEN	619	
282	VHF HLM	COMPUTER	LISTER HILL	1	U-S-(N-W-)	10/71- OPEN	619	
283	VHF UCLA	EDUCATION	UCLA	3	U-S-(VEST)	9/71-10/71	15	
263	VHF UCLA VHF HIGH NOTE	EDUCATION RANGING	TRU Sandia/Aec	3 1	U-S- (WEST)	9/71-10/71 3/71-6/72	15	
284 284	VHF HIGH NOTE	RANGING	SANDIA/AEC	3	U-S-	3/71-6/72	5	
285	VHF STANFORD	EDUCATION	STANFORD UNIV	1	U.S. (WEST)	5/71- 6/72	. 5 2	
235	VHF STANFORD	EBUCATION	STANFORD UNIV	् <u>र</u> े ।	U.S. (VEST)	5/71- 6/72	139	
286	HET (ARC)	EDUCATION	APP. REG. COMM.	3	APPALACHIA	6/74- OPEN	536	
267	VHF SEEK	METEOR.	SIERRA RES CORP	3 //	U.S.	1/72-12/72	9	
248	GE/MARAO	DATA TRANS	GE	i	ATLANTIC	4/72- 5/72	. 7	
258	GE/MARAD	MARITIME	30	i	ATLANTIC	4/72- 5/72	ż	
288	GE/MARAO	RANGING	6 E	i	ATLANTIC	4/72- 5/72	ż	
288	GE/MARAD	DATA TRANS	GE ·	Ĵ	ATLANTIC	4/72- 5/72	46	
285	GE/MARAD	MARITIME	ØÉ	3	ATLANTIC	4/72- 5/72	46	
288	GE/MARAD	RANGING	GE	3	ATLANTIC	4/72- 5/72	46	
289	VHF CALYPSO	DATA TRANS	COUSTEAU GROUP	3	ANTARCTICA	6/72- 1/76	358	
289	VHF CALYPSO	SUPPORT	COUSTEAU GROUP	3	ANTARCTICA	6/72- 1/76	358	
290	VHF BERING SEA	SUPPORT	US/USSR	1	BERING SEA	12/72- 3/73	4.3	
291	VHF ZURITA	SUPPORT	AEC	ī	ALASKA/HAW.	6/73-12/73	62	
292	VHF CLIPPER	SUPPORT	MOODY COLLEGE	1	ATLANTIC	7/73- 8/77	4	
292	VHF CLIPPER	SUPPORT	HOODY COLLEGE	3	ATLANTIC	6/73- 8/77	342	
292	VHF CLIPPER	SUPPORT	TEXAS ACH	3	ATLANTIC	6/73- 8/77	342	
293	GE/EXXON	DATA TRANS	GE & EXXON	1	ATLANTIC	7/73- 2/74	90	
293	GE/EXXON	MARITIME	GE E EXXON	1	ATLANTIC	7/73- 2/74	98	
293	GE/EXXON	RANGING	GE & EXXON	1	ATLANTIC	7/73- 2/74	90	
293	GE/EXXON	DATA TRANS	GE & EXXON	3	ATLANTIC	7/73- 2/74	186	

⁻ ATS SCHEDULED TIME/CTS ACTUAL TIME

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100	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS	•
293	GE/EXXON	HARITIHE	GE & EXXON	3	ATLANTIC	7/73- 2/74	186	
293	GE/EXXON	RANGING	GE & EXXON	. 3	ATLANTIC	7/73- 2/74	186	
294	SP HET	SUPPORT	HET	ī	U.S.	1/73- 6/77	1654	
294	SP HET	SUPPORT	HET	3	U.S.	1/73- 6/77	1918	
295	VHF NIAID	MEDICAL	NIAID	ī	PACIFIC	10/73- OPEN	237	
297	VHF USP/FIJI	EDUCATION	U. SO. PACIFIC	•	PACIFIC	1/74- OPEN	2667	
300	VHF THCHIS	MEDICAL	IHCHIS '	i	ALASKĀ	5/74- 5/74	2	
301	VHF GATE	SUPPORT	NOAA	3	UNKNOUN	1/74- 9/74	388	
302	NEA	EDUCATION	NAT EDUC ASSOC	i i .	APPAL/ALASK	1/76- 4/77	39	
302	NEA	EDUCATION	NAT EDUC ASSOC	ż	APPAL/ALASK	1/76- 4/77	76	
304	VHF OPN	TIME/FREQ	RADIO RES LABS	ī	JAPAN	67- OPEN	154	
305	VHF ALCHA	COMPUTER	U. OF HAMAII	ī	PACIFIC	72- OPEN	1167	
306	VHF DRAKE	SUPPORT	TEXAS AGM	3	ANTARCTICA	1/75- OPEN	428	
307	VHF OCEAN	SUPPORT	U. OF HIAMI	3	ATLANTIC	12/77- OPEN	2241	
309	NSF	SUPPORT	TEXAS AGM	3	ATLANTIC	3/76- 9/76	161	
310	VHF DEA	CONFERENCE	DRUG ENF AGY	3	Ü.S.	4/76- OPEN	131	
310	VHF DEA	RANGING	GE	3	U.S.	4/76- OPEN	131	
310	VHF DEA	CONFERENCE	SE	3	u.s.	4/76- OPEN	131	
310	VHF DEA	RANGING	DRUG ENF AGY	3	U.S.	4/76- OPEN	131	
311	GSFC	DEMO	NASA/6SFC	•	U.S.(EAST)	7/76- OPEN	1705	
312	ALC	CONFERENCE	AMER LUTHERAN C	1	U.S.	6/76- OPEN	219	
315	ERDA	DATA TRANS	ERDA	i	PACIFIC	1/78- 1/79	146	
315	ERDA	SUPPORT	ERDA	i	PACIFIC	1/78- 1/79	146	
315	ERDA	DATA TRANS	ERDA	ż	PACIFIC	7/76- 6/76	5	
315	ERDA	SUPPORT	ERDA	3	PACIFIC	7/76- 8/76	5	
316	NSTL	MEDICAL	SO REO MED CONS	3	U.S. (SOUTH)	10/76-10/76	71	
316	NSTL	MEDICAL	NAT SP TECH LAB	3	U.S.(SOUTH)	10/76-10/76	71	
317	LAMONT	SUPPORT	LAMONT/DOHERTY	3	SO- OCEAN	10/76-10/76	161	
314	DRI	DATA TRANS	DESERT RES INST	ĭ	ANTARCTICA	12/76- 1/77	10	
318	DRI	METEOR.	DESERT RES INST	i	ANTARCTICA	12/76- 1/77	10	
318	DRI	DATA TRANS	DESERT RES INST	ŝ	ANTARCTICA	12/76- 1/77	627	
316	DRI	METECR.	DESERT RES INST	3	ANTARCTICA	12/76- 1/77	627	
319	SIRIUS	RANGING	BAKER DEV CORP	3	BERHUDA	12/76- 1/77	40	
319	SIRIUS	SUPPORT	BAKER DEV CORP	3	BERMUDA	12/76- 1/77	40	
320	SAMOA	EDUCATION	U. SO. PACIFIC	ĭ	SAMOA	1/77- OPEN	258	
321	FLTAC	CONFERENCE	DEPT OF NAVY	į	W. HEMIS.	1/7/1- OPEN	391	
322	IOHW	SUPPORT	WOODS HOLE INST	š	PACIFIC	1/17- 2/77	244	
324	SIPLE	SUPPORT	STANFORD UNIV	3	W. HENIS.	2/77- OPEN	1166	
325	GYRE	SUPPORT	TEXAS ACH	3	W. HENIS.	4/77-10/78	315	
329	NORPAX	SUPPORT	U. OF CAL/NAVY	ĭ	N. PACIFIC	\$/77= 6/77	53	
330	MONTANA	SUPPORT	ST. OF HONTANA	3	MONTANA	6/77-11/77	163	
331	PLU	BROADCAST	PROJECT LOOK-UP	3	PUERTO RICO	1/76- OPEN	87	
331	PLU	EDUCATION	PROJECT LOOK-UP	3	PUERTO RICO	1/76- OPEN	67	
332	ENDEAVOR	SUPPORT	U. OF RHODE ISL	ž	ATLANTIC	7/77- 1/78	168	
333	U. OF W. INDIES	EDUCATION	DEPT OF ST/AID	3	JAMAICA	1/78- 6/78	223	
335	VHF SAR SIM	RANGING	BAKER DEV CORP	3	SERNUDA	6/77- 9/77	15	
336	ERDA/DOD	SUPPORT	ERDA	ĭ	ENEWETAK	10/77- 9/78	49	
338	DISP	CONFERENCE	DEPT OF INTER	i	PACIFIC	12/77- OPEN	1453	
340	SAMOA TV SAMPE	BROADCAST	PSSC	i	SANDA	9/77- OPEN	53	
34G	SAHOA TV SAMPE	BROADCAST	PSSC	ŝ	SAMOA	9/77- OPEN	96	
342	PERU	SUPPORT	ADVENTURES UNL.	3	PERU	6/78- 7/78	46	
343	ORANGE	SUPPORT	NAT. SC. FOUND.	3	ANTARCTICA	7/78- 8/78	176	
344	BARBADOS	MEDICAL	DEPT OF ST/AID	3	BARBADOS	8/78- 9/78	14	
601	RADIO FREG INT.	WAVE PROP	NASA/GSFC		U.S.	6/74-12/76	877	
602	VHRR RADIOMETER	METEOR.	NA SA/ESFC	č	U.S.	6/74- 9/74	360	
	ering newseriests		THE WINE WATER	. •		-/17- 7/14	300	

AVATE SCHEDULED TIME/CTS ACTUAL TIME

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IDO	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS +
603	RAD ASTRO INTER	WAVE PROP	NASA/ESFC	6	WORLD	6/74- 6/75	. •
604	SAPPSAC	SAT CONTRL	NA SA / GSFC	•	U.S.	6/74- 1/75	7Ž
605	PLACE	DATA TRANS	NASA	6	U.S.	9/74- 6/75	967
605	PLACE	RANGING	NASA	6	U.S.	9/74- 6/75	967
6 06	RADIO BEACON	HAVE PROP	NOAA	•	U.S.	6/74- 7/79	0
606	RADIO BEACON	HAVE PROP	NOAA	6	EUROPE	6/74- 7/79	0
607	IHORAS .	SAT CONTRL	NA SA / GSFC	6	U.S.	6/74- 7/75	5
404	PROPAGATION (E)	MAVE PROP	ESTEC	6	EUROPE	8/75-10/76	2263
609	MMW	HAVE PROP	NASA/BSFC	6	u.s.	6/74- 7/79	3271
609	MMU	HAVE PROP	U- OF TEXAS	6	TEXAS	6/74- 7/79	3271
607	MMM	HAVE PROP	OHIO STATE U.	6	OHIO	6/74- 7/79	3271
609	MMU	HAVE PROP	COMSAT LABS	6	VIRGINIA	6/74- 7/79	3271
609	MMV	MAVE PROP	WESTINGHOUSE	6	MARYLAND	6/74- 7/79	3271
609	MMU	MAVE PROP	NAVAL RES LAB	6	HARYLAND	6/74- 7/79	3271
609	MMU .	MAVE PROP	VIRGINIA POLY		VIRGINIA	6/74- 7/79	3271
609	MMM	WAVE PROP	BATTELLE LAS	•	MASHINGTON	6/74- 7/79	3271
609	MMU	MAVE PROP	BELL LAB	•	NEW JERSEY	6/74- 7/79	3271
609 610	MMU Interferometer	WAVE PROP	ARMY	•	NEW JERSEY	6/74- 7/79	3271
612	HET (ARC)	EDUCATION	NASA/6SFC	•	U.S.	6/74-11/78	104
612	HET (ARC)	MEDICAL	ST. OF ALASKA Indian HLTH SER	b A	ALASKA	6/74- 6/75	1741
612	HET (ARC)	EDUCATION	ROCKY MIN STS	4	ALASKA	6/79- 6/75	1741
612	HET (ARC)	EDUCATION	APP. REG. COMM.	•	ROCKY HTNS	6/74- 6/75	1741
612	HET (ARC)	MEDICAL	VETERANS ADM		APPALACHIA APPALACHIA	6/74- 6/75	1741
612	HET (ARC)	EDUCATION	VETERANS ADM	I	APPALACHIA	6/74- 6/75 6/74- 6/75	1741 1741
612	HET (ARC)	MEDICAL	WANI	Ĭ	ALASKA/WASH	6/74- 6/75	1741
612	HET (ARC)	EDUCATION	UANI	Ž	ALASKA/WASH	6/74- 6/75	1741
617	TORE	DATA TRANS	NASA/GSFC	I	WORLD	9/74- 7/79	622
617	TORE	SAT CONTRL	NASA/GSFC	6	WORLD	9/74- 7/79.	622
618	TRUST	DATA TRANS	NASA/GSFC	-3	U.S.	9/74- 7/75	40
620	GEOS-C	SAT CONTRL	NASA/6SFC	6	WORLD	9/74- 7/79	894
620	GEOS-C	DATA TRANS	NASA/6SFC	6	MORLD	9/74- 7/79	874
623	L-BAND EXP	WAVE PROP	U. OF PA	6	U-S-(EAST)	8/76- 1/77	787
631	ENV HEAS EXP	SCIENTIFIC	NASA/GSFC	6	u.s.	6/74- 7/77	50
638	COMSAT PROP IND	HAVE PROP	COMSAT LABS	6	EUROPE	3/76- 7/76	667
639	ALL DEMO	DEMO	NASA	6	U.S.	6/74- 7/79	322
640	APOLLO-SOYUZ	SUPPORT	NASA/HOUSTON		WORLD	10/79- 7/75	333
647	SITE	BROADCAST	INDIA	6	INDTA	8/75- 8/76	2171
647	SITE	EDUCATION	INDIA	6	INDIA	8/75- 8/76	2171
649	MAG FIELD STUDY	SCIENTIFIC	NASA/GSFC	6	U-S.	4/75- 6/75	295
650	HAG DATA	SCIENTIFIC	UCLA	6	U.S.	5/75- 8/76	903
657	CRC	rang'i ng	CANADA/CRC	6	CANADA	9/74- 8/77	138
658	COMSAT PROP US'	WAVE PROP	COMSAT LABS	6	U-S-(EAST)	6/74- 6/78	159
660	PLU	BROADCAST	PROJECT LOOK-UP	6 .	SO.AMERICA	1/76- 7/79	141
660	PLU .	EDUCATION	PROJECT LOOK-UP	6	SO.AMERICA	1/76- 7/79	141
661	ALFE	BROADCAST	PSSC	6	ALASKA	9/77-10/78	1979
661	ALFE	DATA TRANS	PSSC	6	ALASKA	9/77-10/78	1979
663 663	U. OF W. INDIES	BROADCAST	DEPT OF ST/AID	6	WEST INDIES	10/78- 7/79	66
664	U. OF W. INDIES	EDUCATION	DEPT OF ST/AID	•	WEST INDIES	10/78- 7/79	66
664	SAR L-BAND C/O Sar L-Band C/O	RANGING RANGING	FAA	• :	N. ATLANTIC	8/74- 4/75	13
666	UHF/NRL	SCIENTIFIC	BOEING Naval Res Lab	D .	N. ATLANTIC	8/74- 4/75	13
667	ALVA	MEDICAL		•	U-5 =	9/77- 5/78	1.0
667	ALVA	MEDICAL	PSSC PSSC	2	ALASKA	9/77- 7/79	69
667	ALVA	EDUCATION	PSSC	6	U.S. (WEST)	9/77- 7/79 9/77- 7/79	69
		FRACE ITOM	F336	6	ALASKA	7/11- 7/79	69

[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

10.0	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS .
667	ALVA	EDUCATION	PSSC	6	U.S.(WEST)	9/77= 7/79	69
664	MOTOROLA	VAVE PROP	MOTOROLA	6	U.S.	7/77- 9/78	47
670	TÉAN	EDUCATION	MONTANA ST U	6	HONTANA	9/77- 7/79	2
671	MSH	MEDICAL	MTN STS HTH COR	ě	ROCKY HTHS	3/75- 5/75	22
672	SAMFE	BROADCAST	PSSC	ě	SAMOA	9/77- 2/76	444
673	NIE	EDUCATION	APP. REG. COMM.	6	APPALACHIA	1/78- 7/79	3
674	SE L-BAND	RANGING	GE	6	U.S. (EAST)	12/77- 7/79	573
674	SE L-BAND	SUPPORT	GE	ě	U.S. (EAST)	12/77- 7/79	573
677	IHS	MEDICAL	INDIAN HLTH SER	6	ALASKA	9/78- 7/79	ā
677	INS	COMPUTER	INDIAN HLTH SER	ě	ALASKA	9/78- 7/79	ŏ
677	IHS	CONFERENCE	INDIAN HLTH SER	•	ALASKA	9/78- 7/79	Ď
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[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

3.2 Sorted by Experiment Name

'ID.	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS	•
CTS-20	ADV GRD REC EQ	GRO TERM	NASA/GSFC	CTS.	U.S.	4/74- 4/78	87	
CTS-12	AESP II ,	EDUCATION	APP. REG. COMM.	CTS	APPALACHIA	PENDING	0	
312	ALC	CONFERENCE	AHER LUTHERAN C	1	U.S.	6/76" OPEN	219	
661	ALFE	BROADCAST ,	PSSC	6	ALASKA	9/77-10/78	1979	٠
661	ALFE	DATA TRANS	PSSC	6	ALASKA	9/77-10/78	1979	i
639	ALL DEMO	DENO	NASA	6	U.S.	6/74- 7/79	322	
247	ALPHA-2	RANGING	USAF/SAMSO	5	ATLANTIC	7/70- 2/71	18	
247	ALPHA-2	RANGING	AII	5	ATLANTIC	7/70- 2/71	98	
667	ALVA	HEDICAL	PSSC	6	ALASKA	9/77- 7/79	69	
667	ALVA '	MEDICAL	PSSC	6	U.S.(WEST)	9/77- 7/79	69	
667	ALVA	EDUCATION	PSSC	6	ALASKA	9/77- 7/79	69	
667	ALVA	EDUCATION	PSSC ·	6	U.S. (VEST)	9/77- 7/79	69	
640	APOLLO-SOYUZ	SUPPORT	NASA/HOUSTON	6	MORLD	10/74- 7/75	333	
344	BARBADOS	MEDICAL	DEPT OF ST/AID	3	BARBADOS	8/78- 9/78	14	
CTS-07	BIOMED COMMUN	MEDICAL	LISTER HILL	CTS	U.S.	6/77- OPEN	404	
CT\$-07	BIOMED COMMUN	EDUCATION	LISTER HILL	CTS	U.S.	6/77- OPEN	404	
CTS-04	COLLEGE CURR	EDUCATION	STANFORD UNIV	CTS	U.S./CANADA	2/76- OPEN	446	
CTS-04	COLLEGE CURR	EDUCATION	CARLETON UNIV	CTS	U.S./CANADA	2/76- OPEN	446	
CTS-01	COMM LINK CHAR	HAVE PROP	NASA/6SFC	CTS	U.S.	2/76-12/77	315	
CTS-01	COMM LINK CHAR	HAVE PROP	OHIO STATE U	CTS	OHIO	2/76-12/77	315	
CTS-01	COMM LINK CHAR	HAVE PROP	VIRGINIA POLY	CTS	VIRGINIA	2/76-12/77	315	
CTS-01	COMM LINK CHAR	MAVE PROP	U. OF TEXAS	CTS	TEXAS	2/76-12/77	315	
259	CONSAT C/L PROP	HAVE PROP	COMSAT LABS	5	W. HEMIS.	1/72- 4/72	37	
636	COMSAT PROP IND	HAVE PROP	COMSAT LABS	6	EUROPE	3/76- 7/76	667	
650	COMSAT PROP'US	MAVE PROP	COMSAT LABS	6	U.S. (EAST)	6/74- 6/78	159	
CTS-25	CONGRESS	CONFERENCE	GEO WASH UNIV	CTS	MARYLAND	4/77- 6/78	39	*
260	CRC C/L-BAND	HAVE PROP	CANADA	5	CANADA	9/71- 5/72	113	
657	CRC	RANGING	CANADA/CRC	6	CANADA	9/74- 1/77	138	
CTS-35	CT SCANNING NET	MEDICAL	U. OF COLORADO	CTS	U.S. (WEST)	4/79- 7/79	0	
102	DATA XHISSION	MEDICAL	DUKE U. HED CEN	1	U.S.(EAST)	11/71-11/71	54	
CTS-13	DECENT MED ED	MEDICAL	LAMI	ĊTS	ALASKA/YASH	3/77- OPEN	292	
C75-13	DECENT MED ED	EDUCATION	VAMI	CTS	ALASKA/WASH	3/77- OPEN	292	
CTS-13	DECENT MED ED	EDUCATION	U OF WASHINGTON	CTS	,	3/77- OPEN	292	
CT-24	DICE	DATA TRANS	NASA/LERC	CTS	U-S-(EAST)	6/77- OPEN	131	
C15-24	DICE	DATA TRANS	COMSAT LABS	CTS	U.S. (EAST)	5/76- OPEN	131	
338	DISP	CONFERENCE	DEPT OF INTER	1	PACIFIC	12/77- OPEN	1453	
318	ORI	DATA TRANS	DESERT RES INST	i	ANTARCTICA	12/76- 1/77	10	
318	DRI	METEOR.	DESERT RES INST	i	ANTARCTICA	12/76- 1/77	10	
318	DRI	DATA TRANS	DESERT RES INST	3	ANTARCTICA	12/76~ 1/77	627	
318	DRI	METEOR.	DESERT RES INST	3	ANTARCTICA	12/76- 1/77	627	
332	ENDEAVOR	SUPPORT	U. OF RHODE ISL	3	ATLANTIC	7/77- 1/78	168	
·	ENV MEAS EXP	SCIENTIFIC	NASA/GSFC	ě	U.S.	6/74- 7/77	50	
631		DATA TRANS	ERDA	-		1/78- 1/79	146	
315	ERDA	SUPPORT		1	PACIFIC		146	
315	ERDA		ERDA	1	PACIFIC PACIFIC	1/78- 1/79		
315	EROA	DATA TRANS	ERDA	3		7/76- 8/76	5	
315	ERDA	SUPPORT	ERDA	-	PACIFIC	7/76- 8/76	5	
336	ERDA/DOD	SUPPORT	ERDA	1	ENEWETAK	10/77- 9/78	49	
321	FLTAC	CONFERENCE	DEPT OF NAVY	3	W. HEMIS.	1/77 - OPEN	391	
620	GEOS-C	SAT CONTRL	NA SA / GSFC	•	WORLD	9/74- 7/79	8-4	
620		DATA TRANS	NASA/GSFC	6	HORLD	9/74- 7/79	894	
201		RANGING	6E	1	H. AMERICA	6/70-10/72	1	
261	GE L-BAND	RANGING	GE	3	N. AMERICA	6/70-10/72	51	
261	GE L-BAND	RANGING	39	5	N. AMERICA	6/70- 6/73	152	
674	GE L-BAND	RANGING	GE	6	U.S. (EAST)	12/77- 7/79	573	
674	SE L-BAND	SUPPORT	GE	6	U.S.(EAST)	12/77- 7/79	573	

⁻ ATS SCHEDULED TIME/CTS ACTUAL TIME

IDe	EXP. NAME	CAT	EXPERIMENTER	SAT	LUCATION	CHRONOLOGY	HRS =
293	GE/EXXON	DATA TRANS	GE & EXXON	1	ATLANTIC	7/73- 2/74	• 0
293	SE/EXXON	MARTTIME	GE C EXXON	i	ATLANTIC	7/72- 2/74	• 0
293	SE/EXXCN	RANGING	GE & EXXON	ī	ATLANTIC	7/73- 2/74	90
293	SE/EXXON	DATA TRANS	GE & EXXON	3	ATLANTIC	7/73- 2/74	166
293	SE/EXXON	MARITIME	GE C EXXON	3	ATLANTIC	7/73- 2/74	166
293	SE/EXXON	RANSING	GE C EXXON	3	ATLANTIC	7/73= 2/74	106
234	GE/FAA	RANGING	GE	1	N. ATLANTIC	41/69- 6/71	4
234	GE/FAA	RANGING	GE	3	N. ATLANTIC	11/69- 6/71	44
284	GE/MARAD	DATA TRANS	GE	1	ATLANTIC	4/72- 5/72	7
244	GE/HARAD	MARITIME	GE CONTRACT	1	ATLANTIC	4/72- 5/72	7
284	GE/MARAD	ranging	GE	1,	ATLANTIC	4/72- 5/72	7
28#	GE/HARAD	DATA TRANS	GE	3	ATLANTIC	4/72- 5/72	46
288	GE ∮MARAD	Maritime	6E	3	ATLANTIC	4/72- 5/72	46
288	GE/MARAD	ranging	6E	3	ATLANTIC	4/72- 5/72	46
311	GSFC	DEMO	NASA/ESFC	3	U.S.(EAST)	7/76- OPEN	1705
325	GYRE	SUPPORT	TEXAS AGH	3	W. MEMIS.	4/77-10/78	315
CTS-17	HEALTH ED TV	MEDICAL	ASSOC OF W HOSP	CTS	ROCKY HTNS	PENDING	0
CTS-17	HEALTH ED TV	EDUCATION	ASSOC OF W HOSP	CTS	ROCKY HTNS	PENDING	0
CTS-11	HEALTH/COMMUN	HEDICAL	VETERANS ADM	CTS	U.S. (WEST)	6/77- OPEN	306
CT5-11	HEALTH/COMMUN	EDUCATION	VETERANS ADM	CTS	U.S. (WEST)	6/77- OPEN	306
227	HET ALASKA	EDUCATION	ST. OF ALASKA	1	ALASKA	6/69- OPEN	11314
227	HET ALASKA	MEDICAL	ST. OF ALASKA	1	ALASKA	6/69- OPEN	11314
227	HET ALASKA	EDUCATION	NAT EDUC ASSOC	1 .	W. HEMIS.	6/69- OPEN	11314
286 612	HET (ARC)	EDUCATION	APP. REG. COMM.	3	APPALACHIA	6/74- OPEN	536
612	HET (ARC)	EDUCATION MEDICAL	ST. OF ALASKA Indian Hlth Ser	4	ALASKA	6/74- 6/75	1741
612	HET (ARC)	EDUCATION	ROCKY HTN STS	•	ALASKA	6/74- 6/75	1741
612	HET (ARC)	EDUCATION	APP. REG. COMM.	4	ROCKY MYNS Appalachia	<u>6/740 6/75</u> 6/74- 6/75	1741
612	HET (ARC)	MEDICAL	VETERANS ADM	7	APPALACHIA	6/74- 6/75	1741 1741
612	HET (ARC)	EDUCATION	VETERANS ADM	7	APPALACHIA	6/74-6/75	1741
612	HET (ARC)	MEDICAL	VANI	Z	ALASKA/WASH	6/74- 6/75	1741
612	HET (ARC)	EDUCATION	WAMI	Ĭ.	ALASKA/WASH	6/74- 6/75	1791
CT5-22	ICE FLOW	DATA TRANS	NASA/LERC	CTS	ALASKA	8/76~ 9/76	70
211	IOCS	METEOR.	NOAA	3	U.S.	11/67-10/72	1050
211	ICCS	SAT PHOTOS	NOAA	3	U.S.	11/67-10/72	1050
607	IHORAS	SAT CONTRL	NASA/GSFC		U.S.	6/74- 7/75	5
677	IHS	MEDICAL	INDIAN HLTH SER	6	ALASKA	9/78- 7/79	Ö
677	IHS	COMPUTER	INDIAN HLTH SER	Ğ	ALASKA	9/78- 7/79	Č
677	IHS	CONFERENCE	INDIAN HLTH SER	6	ALASKA	9/78- 7/79	Õ
616	INTERFEROMETER	SAT CONTRL	NASA/GSFC	6	U.S.	6/74-11/78	104
CTS-16	INTRANASA COMM	CONFERENCE	NASA/GSFC	CTS	u.s.	5/76- OPEN	382
CTS-18	INTRANASA COMM	CONFERENCE	NA SA/LERC	CTS	U.S.	5/76- UPEN	382
CTS-18	INTRANASA COMM	CONFERENCE	NA SA/ARC	CTS	U.S.	5/76- OPEN	382
317	LAHONT	SUPPORT	LAMONT/DOHERTY	3	SO. OCEAN	10/76- 3/77	161
106	LAUNCH SUPPORT	SUPPORT.	NASA	1	U.S.	1/67- 1/76	930
106	LAUNCH SUPPORT	SUPPORT	NASA	3	U.S.	1/67- 8/76	369
106	LAUNCH SUPPORT	SUPPORT	NASA	5	U-5.	3/67-10/72	69
108	LAUNCH SUPPORT	SUPPORT	NASA	•	U.S.	7/77- 2/78	7
281	LOS ALAMOS	A/C COHH	EGEE	1	W. HEMIS.	10/70-10/71	265
251	L-BAND DOT	DATA TRANS	BOEING	3	N. AMERICA	4/74-10/76	128
251	L-BAND DOT	RANGING	BOEING	5	N. AMERICA	2/71- 7/74	557
623	L-BAND EXP	WAVE PROP	U. OF PA	6	U.S. (EAST)	8/76- 1/77	787
252	L-BAND FAA	RANGING	FAA	5	N. AMERICA	4/71- 4/72	275
252	L-BAND FAA L-BAND RANGING	RANGING RANGING	BOEING	5	N. AMERICA	4/71- 4/72	275
250	L-BARU KANGING	MUNICH	WESTINGHOUSE	1 .	U-S-(WEST)	2/71- 5/71	6

⁻ ATS SCHEDULED TIME/CTS ACTUAL TIME

ID.	SHAH . TXS	CAT	Experimenter	SAT	LOCATION	CHRONOLOGY	HRS .
250	L-BAND RANGING	RANGING	VESTINGHOUSE	3	U.S. (MEST)	2/71- 5/71	٥
250	L-BAND RANGING	RANGING	WESTINGHOUSE	-Š	U.S.(MEST)	2/71- 5/71	••
264	L-BAND TRILAT	RANGING	6E	ī	U.S.	1/74- 1/76	19
268	L-BAND TRILAT	RANGING	ĞĒ	3	U.S.	1/74- 1/76	Żá
268	L-BAND TRILAT	RANGING	SE	i	U.S.	1/74- 1/76	172
650	HAS DATA	SCIENTIFIC	UCLA	1	u.s.	5/75- 6/76	903
649	MAG FIELD STUDY	SCIENTIFIC	NASA/GSFC	ě	U.S.	4/75- 6/75	295
249	MARAD	DATA TRANS	MARAD	Š	W. HENTS.	3/70-12/71	65
249	HARAD	HARITIHE	MARAD	5	W. HEHIS.	3/70-12/71	45
249	MARAD	DATA TRANS	AII	\$	W. HENIS.	3/70-12/71	65
249	HARAD:	MARITIME	AII	5	W. HEHIS.	3/70-12/71	65
249	HARAD	RANGING	AII	\$	W. HEMIS.	3/70-12/71	65
264	MARAD/AII/PLACE	DATA TRANS	AII	3	WORLD	1/73- OPEN	131
264	MARAD/AII/PLACE	MARITIME	AII	3	WORLD	1/73- OPEN	131
264	MARAD/AII/PLACE	DATA TRANS	AII	5	WORLD	1/73- OPEN	912
264	MARAD/AZI/PLACE	MARITIME	AII	\$	MORLD	1/73- OPEN	912
264	HARAD/AIT/PLACE	RANGING	AII	5	UORLD	1/73- OPEN	912
244	MMU REG 1	HAVE PROP	NASA/GSFC	5	N. AMERICA	5/67- 9/71	1866
245	MMW REG 2	HAVE PROP	NASA/GSFC	5	N. AMERICA	4/69- 9/71	326
609	MMR	MAVE PROP	NASA/GSFC	6	U.S.	6/74- 7/79	3271
609	MMH	MAYE PROP	U. OF TEXAS	5	TEXAS	6/74- 7/79	3271
609	MMR	WAVE PROP	OHIO STATE U.	6	OHIO	6/74- 7/79	3271
607	MMM	MAVE PROP	COMSAT LABS	6	Virginia	6/79- 7/79	3271
607	MMM	HAVE PROP	MESTINGHOUSE	6	MARYLAND	6/74- 7/79	3271
607	NNP	MAVE PROP	NAVAL RES LAB	6	MARYLAND	6/74- 7/79	3271
609	MAM .	WAVE PROP	VIRGINIA POLY	6	VIRGINIA	6/74- 7/79	3271
609	MMW.	MAVE PROP	BATTELLE LAB	6	WASHINGTON	6/74- 7/79	3271
609	WWA	HAVE PROP	BELL LAB	6	NEW JERSEY	6/74- 7/79	3271
607	MMV	WAVE PROP	ARMY	•	NEW JERSEY	6/74- 7/79	3271
330	MONTANA	SUPPORT	ST. OF MONTAMA	3	HONTANA	6/77-11/77	163
664	HOTOROLA	MAYE PROP	MOTOROLA	•	U.S.	7/77- 9/78	47
671	MSH	MEDICAL	HTN STS HTH COR	•	ROCKY HTNS	3/75- 5/75	22
210 210	MSSCC	DATA TRANS	NOAA	Ī	WORLD	3/69- 6/72	7
210	MSSCC MSSCC	METEOR.	NOAA	Ī	WORLD	3/69- 6/72	7
210	MSSCC	DATA TRANS METEOR.	NOAA Noaa	3	WORLD	3/69- OPEN	26766
302	NEA	EDUCATION	NAT EDUC ASSOC	i	WORLD	3/69- OPEN	26966
302	NEA	EDUCATION	NAT EDUC ASSOC	3	APPAL/ALASK APPAL/ALASK	1/76- 4/77	39
673	NIE	EDUCATION	APP. REG. COMM.	J L	APPALACHIA	1/78- 7/79	76
329	NORPAX	SUPPORT	U. OF CAL/NAVY	i	N. PACIFIC	5/77- 6/77	53
309	NSF	SUPPORT	TEXAS ACH	÷	ATLANTIC	3/76- 9/76	161
316	NSTL	MEDICAL	SO REO MED CONS	3	U.S. (SOUTH)	10/76-10/76	71
316	NSTL	MEDICAL	NAT SP TECH LAB	3	U.S.(SOUTH)	10/76-10/76	71
343	ORANGE	SUPPORT	NAT. SC. FOUND.	3	ANTARCTICA	7/78- 8/78	176
342	PERU	SUPPORT	ADVENTURES UNL.	3	PERU	6/78- 7/78	46
605	PLACE	DATA TRANS	NASA	6	U-S-	9/74- 6/75	967
605	PLACE	RANGING	NASA	6	U.S.	9/74- 6/75	967
331	PLU	BROADCAST	PROJECT LOOK-UP	3	PUERTO RICO	1/76- OPEN	87
331	PLU	EDUCATION	PROJECT LOOK-UP	3	PUERTO RICO	1/76- OPEN	87
666	PLU	BROADCAST	PROJECT LOOK-UP	6	SO.AMERICA	1/76- 7/79	141
660	PLU	EDUCATION	PROJECT LOOK-UP	6	SO.AMERICA	1/76- 7/79	191
CTS-26	PROJ ADJUNCT	CONFERENCE	SAT BUS SYSTEMS	CTS	VIRGINIA	9/77- 2/78	178
CT5-26	PROJ ADJUNCT	DATA TRANS	SAT BUS SYSTEMS	CTS	VIRGINIA	7/77- 2/78	176
CTS-16	PROJ INTERCHS	EDUCATION	ARCH OF S.F.	CTS	CALIFORNIA	3/76- 6/78	45
604	PROPAGATION(E)	HAVE PROP	ESTEC	6	EUROPE	6/75-10/76	2263
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[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

ID#	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS •
CTS-21	PSSC	DENO	PSSC	cts	U.S.	2/77- OPEN	294
CTS-21	PSSC	SUPPORT	PSSC	CTS	U.S.	2/77- OPEN	204
606	RADIO BEACON	HAVE PROP	NOAA	6	U.S.	6/74- 7/79	0
606	RADIO BEACON	WAVE PROP	NOAA	ě	EUROPE	6/79- 7/79	ā
601	RADIO FREG INT.	HAVE PROP	NASA/ESFC	ă	U.S.	6/74-12/76	877
603	RAD ASTRO INTER	HAVE PROP	NA SA/GSFC	ě	HORLD	6/74- 6/75	
CT5-09	SALINET	EDUCATION	SALINET	CTS	U.S.	10/77- 4/76	10
672	SAMPE	BROADCAST	PSSC	4	SAMOA	9/77- 2/78	444
340	SANDA TV SANFE	BROADCAST	PSSC	ĭ	SAMOA	9/77- OPEN	53
340	SANGA TV SAMPE	BROADCAST	PSSC	3	SAMOA	9/77- OPEN	76
320	SAMOA	EDUCATION	U. SO. PACIFIC	ì	SAMOA	1/77- OPEN	258
604	SAPPSAC	SAT CONTRL	NASA/GSFC	- - -	U.S.	6/74- 1/75	72
664	SAR L-BAND C/O	RANGING	FAA	Ă	N. ATLANTIC	8/74- 4/75	13
664	SAR L-BAND C/O	RANGING	ROEING	6	N. ATLANTIC	8/74- 4/75	13
CTS-19	SAT. DIST.	DATA TRANS	SECA	CTS	U.S. (SOUTH)	12/76- OPEN	655
287	SHF CRC	WAVE PROP	CANADA/CRC	1	CANADA	1/71-12/71	76
254	SHF SEARCH	LAM ENFORC	PUBLIC SYST INC	i ·	U.S.	12/71-12/71	64
253	SHF VLDI	TIME/FREQ	SMITHSONIAN INS	i	U.S.	8/71-10/72	2
253	SHF VLBI	TIME/FREQ	RADIO RES LABS	ī	JAPAN	1/77- 2/77	5
253	SHF VLBI	TIME/FREQ	SMITHSONIAN INS	3	U.S.	5/71-10/72	170
253	SHF VLBI	TIME/FREO	RADIO RES LABS	3	JAPAN	1/77- 2/77	170
253	SHF VLBI	TIME/FREQ	SMITHSONIAN INS	Š	U.S.	5/71-10/72	0
324	SIPLE	SUPPORT	STANFORD UNIV	3	W. HEMIS.	2/77- OPEN	1166
319	SIRIUS	RANGING	BAKER DEV CORP	3	BERMUDA	12/76- 1/77	40
319	SIRIUS	SUPPORT	BAKER DEV SORP	Š	BERMUDA	12/76- 1/77	40
647	SITE	BROADCAST	INDIA	, ,	INDIA	8/75= 8/76	2171
	SITE			4	INDIA		
647		EDUCATION	INOIA	•		8/75- 8/76	2171
107	SPEC SHF	SUPPORT	38		W. HEMIS.	68- 70	1929
107	SPEC SHF	SUPPORT	6E	3	H. HEMIS.	68- 70	1613
294	SP HET	SUPPORT	HET	1	U.S.	1/73- 8/77	1654
294	SP HET	SUPPORT	HET	3	U.S.	1/73- 8/77	1718
248	SP L-BAND	DATA TRANS	ALI	2	U.S. :	8/74- 4/75	135
248	SP L-BAND	CONFERENCE	AII		`U.S.	8/74- 4/75	135
205	SSCC	METEOR.	NOAA	1	WORLD	3/69- OPEN	8372
205	SSCC	DATA TRANS	NOAA	1	WORLD	3/69- OPEN	4372
205	SSCC ····	METEOR.	NOAA	3	WORLD	3/69- OPEN	20
205	SSCC	DATA TRANS	NOAA	3	WORLD	3/69- OPEN	- 20
246	SSRA	RANGING	WESTINGHOUSE -	5	U.S. (WEST)	4/71- 5/71	1
202	SAC SUPPORT	SUPPORT	NASA	1	W. HEMIS.	4/69- 70	270
617	TORE	DATA TRANS	NASA/GSFC	•	WORLD	9/74- 7/79	622
617	TORE	SAT CONTRL	NASA/65FC	•	WORLD	9/74- 7/79	622
670	TEAM	EDUCATION	HONTANA ST U	6	HONTANA	9/77- 7/79	2
CTS-15	TELECONFERENCE	CONFERENCE	WESTINGHOUSE	CTS	U.S. (EAST)	2/76- OPEN	286
543	TELESAT	HAVE PROP	TELESAT CANADA	1	CANADA	9/72- 9/72	136
CTS-T	TEP/SHF	GRO TERM	NASA/LERC	CTS	OHIO	2/76- OPEN	439
CTS-30	TER OF TOMORROW	GRO TERM	FCC	CTS	u.s.	3/70-12/78	56
CTS-06	TET/COMSAT	GRD TERM	COMSAT LABS	CTS	· U.S.(EAST)	2/76- OPEN	266
618	TRUST	DATA TRANS	NA SA / ESFC	6	U.S.	9/74- 7/75	40
666	UHF/NRL	SCIENTIFIC	NAVAL RES LAB	6	u.s.	9/77- 5/78	18
CT5-29	UNIV GRAD STUDY	EDUCATION	VARIAN ASSOC	CTS	U.S.	5/78-12/78	49
333	U. OF W. INDIES	EDUCATION	DEPT OF ST/AID	3	JAHAICA	1/78- 6/78	223
663	U. OF W. INDIES	BROADCAST	DEPT OF ST/AID	6	WEST INDIES	10/78- 7/79	66
663	U. OF W. INDIES	EDUCATION	DEPT OF ST/AID	•	WEST INDIES	10/76- 7/79	66
265	VANGUARD	DATA TRANS	USCG	· 2 ·		3/72- 4/73	78
265	VANGUARD	DATA TRANS	USCS	3	PACIFIC	3/72- 4/73	74

[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

185 VHF A/C A/C COMM ARINC 1 U.S. 1/67- 185 VHF A/C A/C COMM ARINC 1 U.S. 1/67- 290 VHF BERING SEA SUPPORT US/USSR 1 BERING SEA 12/72- 236 VHF BRAZIL EDUCATION STANFORD UNIV 3 M. MEMIS. 2/70- 230 VHF B/ION SUPPORT MAX PLANCK INST 3 W. MEMIS. 3/71- 289 VHF CALYPSO DATA TRANS COUSTEAU GROUP 3 ANTARCTICA 6/72- 289 VHF CALYPSO SUPPORT COUSTEAU GROUP 3 ANTARCTICA 6/72- 292 VHF CLIPPER SUPPORT MOODY COLLEGE 1 ATLANTIC 7/7X- 292 VHF CLIPPER SUPPORT MOODY COLLEGE 1 ATLANTIC 6/73- 292 VHF CLIPPER SUPPORT TEXAS AEM 3 ATLANTIC 6/73- 310 VHF DEA CONFERENCE DRUG ENF AGY 3 U.S. 4/76- 310 VHF DEA RANGING GE 3 U.S. 4/76- 310 VHF DEA RANGING GE 3 U.S. 4/76- 310 VHF DEA RANGING GE 3 U.S. 4/76- 310 VHF DEA RANGING BE 3 U.S. 4/76- 310 VHF DEA RANGING BE 3 U.S. 4/76- 310 VHF DEA RANGING DRUG ENF AGY 3 U.S. 4/76- 310 VHF DEA RANGING DRUG ENF AGY 3 U.S. 4/76- 310 VHF DEA RANGING DRUG ENF AGY 1 U.S. 4/76- 310 VHF DEA RANGING DRUG ENF AGY 1 U.S. 4/76- 310 VHF DEA RANGING DRUG ENF AGY 1 U.S. 4/76- 310 VHF DEA RANGING DRUG ENF AGY 1 U.S. 4/76- 310 VHF DEA RANGING DRUG ENF AGY 1 U.S. 4/76- 310 VHF DEA RANGING DRUG ENF AGY 1 U.S. 4/76- 310 VHF DEA RANGING DRUG ENF AGY 1 U.S. 4/76- 310 VHF DEA RANGING DRUG ENF AGY 1 U.S. 4/76- 310 VHF DEA RANGING DRUG ENF AGY 1 U.S. 4/76- 310 VHF DEA RANGING DRUG ENF AGY 1 U.S. 4/76- 310 VHF DEA RANGING DRUG ENF AGY 1 U.S. HEMIS. 6/68- 225 VHF ENGLAND MARITIME UNITED KINDGOM 3 ATLANTIC 8/70- 301 VHF GATE SUPPORT NOAA 3 UV/KNOUN 1/74-	4/73 232 OPEN 1167 6/70 264 6/70 304 3/73 43 OPEN 38 9/71 176 9/71 176 1/76 358
SOS VHY ALONA COMPUTER US OF HAWAIT I PACIFIC 72- 185 VHF A/C A/C COMM ARINC 1 U.S. 1/67- 290 VHF BERING SEA SUPPORT US/USSR 1 BERING SEA 12/72- 2310 VHF BRAZIL COUCATION STANFORD UNIV 3 L. HEMIS. 2/70- 2310 VHF B/ION SUPPORT MAX PLANCK INST 3 L. HEMIS. 3/71- 2310 VHF B/ION SUPPORT MAX PLANCK INST 3 L. HEMIS. 3/71- 2310 VHF B/ION SUPPORT MAX PLANCK INST 3 L. HEMIS. 3/71- 2320 VHF CLYPSO DATA TRANS COUSTEAU GROUP 3 ANTARCTICA 6/72- 2320 VHF CLYPSO SUPPORT COUSTEAU GROUP 3 ANTARCTICA 6/72- 2321 VHF CLYPER SUPPORT MOODY COLLEGE 3 ATLANTIC 6/72- 2322 VHF CLYPER SUPPORT MOODY COLLEGE 3 ATLANTIC 6/72- 2322 VHF CLYPER SUPPORT MOODY COLLEGE 3 ATLANTIC 6/72- 2310 VHF DEA GONFERENCE DRUB ENF AGY 3 U.S. 4/76- 310 VHF DEA GONFERENCE DRUB ENF AGY 3 U.S. 4/76- 310 VHF DEA GONFERENCE DRUB ENF AGY 3 U.S. 4/76- 310 VHF DEA GONFERENCE GE. 3 U.S. 4/76- 310 VHF DEA GONFERENCE DRUB ENF AGY 3 U.S. 4/76- 310 VHF DEA GONFERENCE GE. 3 U.S. 4/76- 310 VHF DEA GONFERENCE DRUB ENF AGY 3 U.S. 4/76- 310 VHF DEA GONFERENCE GE. 3 U.S. 4/76- 310 VHF DEA GONFERENCE GE. 3 U.S. 4/76- 310 VHF DEA GONFERENCE GE. 3 U.S. 4/76- 310 VHF GATE SUPPORT HOOAN 3 U.KHOUN 1/74- 2232 VHF EGGG SUPFORT EGGE 1 U. HEMIS. 6/68- 2252 VHF GEGG SUPFORT HOOAN 3 U.KHOUN 1/74- 2263 VHF GE RARGING GE 1 BERHUDA 2/69- 2264 VHF GE RARGING GE 1 BERHUDA 2/69- 2265 VHF GE RARGING GE 1 BERHUDA 2/69- 2266 VHF GE RARGING GE 1 BERHUDA 2/69- 2266 VHF GE RARGING GE 1 BERHUDA 2/69- 2267 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 231 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 232 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 233 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 234 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 235 VHF HAWAII REDICAL HICHIS 1 ALASKA 3/71- 236 VHF NOS TIME/FREQ NAT SHING F STOS 3 U.S. 3/71- 236 VHF NOS TIME/FREQ NAT SHING STOS 3 U.S. 3/71- 236 VHF NOS TIME/FREQ NAT SHING STOS 3 U.S. 3/71- 236 VHF NOS TIME/FREQ NAT SHING 1 U.S. N.W.) 10	OPEN 1167 6/70 264 6/70 308 3/73 43 OPEN 38 9/71 176 9/71 176 1/76 358
185 VHF A/C A/C COMM ARINC I U.S. 1/47- 185 VHF A/C A/C COMM ARINC I U.S. 1/47- 290 VHF BERING SEA SUPPORT US/USER I BERING SEA 12/72- 236 VHF BRAZIL COUCATION STANFORD UNIV 3 b. MEMIS. 2/70- 230 VHF B/ION SUPPORT HAX PLANCK INST 3 W. MEMIS. 3/71- 230 VHF B/ION SUPPORT HAX PLANCK INST 3 W. MEMIS. 3/71- 230 VHF CALYPSO DATA TRANS COUSTEAU BROUP 3 ANTARCTICA 6/72- 289 VHF CALYPSO SUPPORT COUSTEAU BROUP 3 ANTARCTICA 6/72- 289 VHF CLIPPER SUPPORT HOODY COLLEGE 1 ATLANTIC 7/73- 292 VHF CLIPPER SUPPORT HOODY COLLEGE 1 ATLANTIC 6/73- 292 VHF CLIPPER SUPPORT HOODY COLLEGE 3 ATLANTIC 6/73- 310 VHF DEA CONFERENCE DRUB ENF ASY 3 U.S. 4/76- 310 VHF DEA GONFERNCE DRUB ENF ASY 3 U.S. 4/76- 310 VHF DEA RANGING GE 3 U.S. 4/76- 310 VHF DEA RANGING GE 3 U.S. 4/76- 232 VHF EGGG A/C COMM EGGS 1 W. MEMIS. 6/68- 232 VHF EGGG A/C COMM EGGS 1 W. MEMIS. 6/68- 232 VHF EGGG A/C COMM EGGS 1 W. MEMIS. 6/68- 232 VHF EGGG A/C COMM EGGS 1 W. MEMIS. 6/68- 232 VHF EGGG A/C COMM EGGS 1 W. MEMIS. 6/68- 232 VHF EGG SUPPORT HOODA 3 U.KNOWN 1/78- 223 VHF EGG SUPPORT HOODA 3 U.KNOWN 1/78- 224 VHF GE DATA TRANS GE 1 BERHUDA 2/69- 225 VHF GE MARITIME GE 3 BERHUDA 2/69- 226 VHF GE RANGING GE 3 BERHUDA 2/69- 226 VHF GE RANGING GE 3 BERHUDA 2/69- 228 VHF GE RANGING GE 3 BERHUDA 2/69- 228 VHF GE RANGING SANDIA/AEC 1 U.S. 3/71- 231 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 242 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 244 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 245 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 246 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 247 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 248 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 249 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 240 VHF HIGHNOTE RANGING SANDIA/AEC 1 U.S. 3/71- 241 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 242 VHF NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 243 VHF NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 244 VHF HIGHNOTE RANGING SANDIA/AEC 1 U.S. 3/71- 245 VHF NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 246 VHF NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 247 VHF NOTE RA	6/70 264 6/70 308 3/73 43 0PEN 38 9/71 176 9/71 176 1/76 358
185 VHF A/C 200 VHF BERING SEA SUPPORT US/USSR 1 BERING SEA 12/72- 236 VHF BRAZIL COUCATION STANFORD UNIV 3 W. HEMIS. 2/70- 230 VHF B/ION SUPPORT MAX PLANCK INST 3 W. HEMIS. 3/71- 230 VHF B/ION SUPPORT MAX PLANCK INST 3 W. HEMIS. 3/71- 230 VHF CALYPSO DATA TRANS COUSTEAU BROUP 3 ANTARCTICA 6/72- 289 VHF CALYPSO SUPPORT COUSTEAU BROUP 3 ANTARCTICA 6/72- 292 VHF CLIPPER SUPPORT MOODY COLLEGE 1 ATLANTIC 6/73- 292 VHF CLIPPER SUPPORT HOODY COLLEGE 3 ATLANTIC 6/73- 292 VHF CLIPPER SUPPORT TEXAS AEM 3 ATLANTIC 6/73- 310 VHF DEA CONFERENCE DRUB ENF AGY 3 U.S. 4/76- 310 VHF DEA CONFERENCE GE. 3 U.S. 4/76- 310 VHF DEA RANGING GE 3 U.S. 4/76- 310 VHF DEA RANGING GE 3 U.S. 4/76- 232 VHF CEGG A/C COMM EGES 1 W. HEMIS. 6/68- 232 VHF EGGG A/C COMM EGES 1 W. HEMIS. 6/68- 232 VHF EGGG A/C COMM EGES 1 W. HEMIS. 6/68- 232 VHF EGGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 232 VHF EGGG A/C COMM EGES 1 W. HEMIS. 6/68- 232 VHF EGGG A/C COMM EGES 1 W. HEMIS. 6/68- 232 VHF EGGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GATE SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GATE SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2301 VHF GGG SUPPORT TEXAS AGM 3 ANTARCTIC	6/YO 3C# 3/73 43 OPEN 38 9/71 176 9/71 176 1/76 35#
VHF BERING SEA SUPPORT USJUSSR 1 BERING SEA 12/72- 230 VHF BAZIL EDUCATION STANFORD UNIV 3 W. MEMIS. 2/70- 230 VHF BAJON SUPPORT MAX PLANCK INST 3 W. MEMIS. 3/71- 280 VHF CALYPSO DATA TRANS COUSTEAU BROUP 3 ANTARCTICA 6/72- 282 VHF CALYPSO SUPPORT COUSTEAU BROUP 3 ANTARCTICA 6/72- 282 VHF CLIPPER SUPPORT MOODY COLLEGE 1 ATLANTIC 7/73- 282 VHF CLIPPER SUPPORT MOODY COLLEGE 3 ATLANTIC 6/73- 282 VHF CLIPPER SUPPORT TEXAS AEM 3 ATLANTIC 6/73- 2810 VHF DEA CONFERENCE DRUG ENF AGY 3 U.S. 4/76- 2810 VHF DEA CONFERENCE GE. 3 U.S. 4/76- 2810 VHF DEA CONFERENCE GE. 3 U.S. 4/76- 2810 VHF DEA CONFERENCE GE. 3 U.S. 4/76- 2810 VHF DEA RANGING DRUG ENF AGY 3 U.S. 4/76- 2810 VHF DEA CONFERENCE GE. 1 W. MEMIS. 6/68- 2810 VHF DEA RANGING DRUG ENF AGY 3 U.S. 4/76- 2810 VHF DEA RANGING DRUG ENF AGY 3 U.S. 4/76- 2810 VHF GEGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2810 VHF GEGG SUPPORT DRUG ENF AGY 3 U.S. 4/76- 2810 VHF GEGG SUPPORT DRUG ENF AGY 3 U.S. 4/76- 2810 VHF GATE SUPPORT HOAA 3 UNKNOWN 1/74- 282 VHF EGEG SUPPORT HOAA 3 UNKNOWN 1/74- 282 VHF GE DATA TRANS GE 1 BERNUDA 2/69- 282 VHF GE DATA TRANS GE 1 BERNUDA 2/69- 282 VHF GE DATA TRANS GE 3 BERNUDA 2/69- 282 VHF GE DATA TRANS GE 3 BERNUDA 2/69- 282 VHF GE DATA TRANS GE 3 BERNUDA 2/69- 283 VHF GE HANGING GE 3 BERNUDA 2/69- 284 VHF GE HANGING SANDIA/AEC 1 U.S. 3/71- 284 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 284 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 284 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 284 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 285 VHF HAMAII EDUCATION PEACESAT 1 PACIFIC 2/72- 284 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 285 VHF HAMAII HEDICAL HICHIS 1 ALSKA 5/74- 286 VHF NETHERLAND MARITHE NETHERLANDS 3 ATLANTIC 8/70- 287 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. (N.W.) 10/71- 288 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. (N.W.) 10/71- 289 VHF NEM COMPUTER LISTER HILL 1 U.S. (N.W.) 10/71- 280 VHF NEM COMPUTER LISTER HILL 1 U.S. (N.W.) 10/71-	3/73 43 OPEN 38 9/71 176 9/71 176 1/76 358
VHF BERING SEA SUPPORT USJUSSR 1 BERING SEA 12/72- 230 VHF BAZIL EDUCATION STANFORD UNIV 3 W. MEMIS. 2/70- 230 VHF BAJON SUPPORT MAX PLANCK INST 3 W. MEMIS. 3/71- 280 VHF CALYPSO DATA TRANS COUSTEAU BROUP 3 ANTARCTICA 6/72- 282 VHF CALYPSO SUPPORT COUSTEAU BROUP 3 ANTARCTICA 6/72- 282 VHF CLIPPER SUPPORT MOODY COLLEGE 1 ATLANTIC 7/73- 282 VHF CLIPPER SUPPORT MOODY COLLEGE 3 ATLANTIC 6/73- 282 VHF CLIPPER SUPPORT TEXAS AEM 3 ATLANTIC 6/73- 2810 VHF DEA CONFERENCE DRUG ENF AGY 3 U.S. 4/76- 2810 VHF DEA CONFERENCE GE. 3 U.S. 4/76- 2810 VHF DEA CONFERENCE GE. 3 U.S. 4/76- 2810 VHF DEA CONFERENCE GE. 3 U.S. 4/76- 2810 VHF DEA RANGING DRUG ENF AGY 3 U.S. 4/76- 2810 VHF DEA CONFERENCE GE. 1 W. MEMIS. 6/68- 2810 VHF DEA RANGING DRUG ENF AGY 3 U.S. 4/76- 2810 VHF DEA RANGING DRUG ENF AGY 3 U.S. 4/76- 2810 VHF GEGG SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 2810 VHF GEGG SUPPORT DRUG ENF AGY 3 U.S. 4/76- 2810 VHF GEGG SUPPORT DRUG ENF AGY 3 U.S. 4/76- 2810 VHF GATE SUPPORT HOAA 3 UNKNOWN 1/74- 282 VHF EGEG SUPPORT HOAA 3 UNKNOWN 1/74- 282 VHF GE DATA TRANS GE 1 BERNUDA 2/69- 282 VHF GE DATA TRANS GE 1 BERNUDA 2/69- 282 VHF GE DATA TRANS GE 3 BERNUDA 2/69- 282 VHF GE DATA TRANS GE 3 BERNUDA 2/69- 282 VHF GE DATA TRANS GE 3 BERNUDA 2/69- 283 VHF GE HANGING GE 3 BERNUDA 2/69- 284 VHF GE HANGING SANDIA/AEC 1 U.S. 3/71- 284 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 284 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 284 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 284 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 285 VHF HAMAII EDUCATION PEACESAT 1 PACIFIC 2/72- 284 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 285 VHF HAMAII HEDICAL HICHIS 1 ALSKA 5/74- 286 VHF NETHERLAND MARITHE NETHERLANDS 3 ATLANTIC 8/70- 287 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. (N.W.) 10/71- 288 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. (N.W.) 10/71- 289 VHF NEM COMPUTER LISTER HILL 1 U.S. (N.W.) 10/71- 280 VHF NEM COMPUTER LISTER HILL 1 U.S. (N.W.) 10/71-	3/73 43 OPEN 38 9/71 176 9/71 176 1/76 358
VHF BRAZIL EDUCATION STAMFORD UNIV 3 W. MEMIS. 2/70- 230 VHF B/10N SUPPORT MAX PLANCK INST 3 W. MEMIS. 3/71- 289 VHF CALYPSO DATA TRANS COUSTEAU GROUP 3 ANTARCTICA 6/72- 289 VHF CALYPSO SUPPORT COUSTEAU GROUP 3 ANTARCTICA 6/72- 289 VHF CLIPPER SUPPORT MOODY COLLEGE 1 ATLANTIC 6/73- 292 VHF CLIPPER SUPPORT MOODY COLLEGE 1 ATLANTIC 6/73- 292 VHF CLIPPER SUPPORT MOODY COLLEGE 3 ATLANTIC 6/73- 292 VHF CLIPPER SUPPORT TEXAS ACM 3 ATLANTIC 6/73- 310 VHF DEA CONFERENCE DRUG ENF AGY 3 U.S. 4/76- 310 VHF DEA RANGING 6E 3 U.S. 4/76- 310 VHF DEA RANGING 6E 3 U.S. 4/76- 310 VHF DEA RANGING 0RUG ENF AGY 3 U.S. 4/76- 232 VHF EGEG A/C COMPENCE 6E. 3 U.S. 4/76- 232 VHF EGEG SUPPORT TEXAS ACM 3 ANTARCTICA 1/75- 232 VHF EGEG SUPPORT EGEG 1 U.MEMIS. 6/68- 232 VHF EGEG SUPPORT EGEG 1 U.MEMIS. 6/68- 232 VHF EGEG SUPPORT EGEG 1 U.MEMIS. 6/68- 232 VHF EGEG SUPPORT MOOA 3 U.KNOWN 1/74- 220 VHF GATE SUPPORT MOOA 3 U.KNOWN 1/74- 220 VHF GE MARITIME UNITED KINDGOM 3 ATLANTIC 8/70- 222 VHF EGE MARITIME GE 1 BERMUDA 2/69- 223 VHF GE MARITIME GE 1 BERMUDA 2/69- 224 VHF GE MARITIME GE 3 BERMUDA 2/69- 225 VHF GE MARITIME GE 3 BERMUDA 2/69- 226 VHF GE MARITIME GE 3 BERMUDA 2/69- 228 VHF GE MARITIME GE 3 BERMUDA 2/69- 235 VHF MAMAII EDUCATION PEACESAT 1 PACIFIC 2/72- 284 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 231 VHF MSFN PROP MAVE PROP MSFN NETWORK 3 M. HEMIS. 8/71- 231 VHF MSFN PROP MAVE PROP MSFN NETWORK 3 M. HEMIS. 8/71- 232 VHF NETHERLAND MARITIME METHERLANDS 3 ATLANTIC 6/70- 235 VHF NETHERLAND MARITIME METHERLANDS 3 ATLANTIC 6/70- 236 VHF NETHERLAND MARITIME METHERLANDS 3 ATLANTIC 6/70- 237 VHF NETHERLAND MARITIME METHERLANDS 3 ATLANTIC 6/70- 238 VHF NETHERLAND MARITIME METHERLANDS 3 ATLANTIC 6/70- 239 VHF NETHERLAND MARITIME METHERLANDS 3 ATLANTIC 6/70- 239 VHF NETHERLAND MARITIME METHERLANDS 3 ATLANT	9/71 176 9/71 176 1/76 358
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SIGN WHF DEA GONFERENCE GE, SUSS. 4/76- 310 WHF DEA RANGING DRUG ENF AGY SUSS. 4/76- 310 WHF DRAKE SUPPORT TEXAS AGM SANTARCTICA 1/75- 232 WHF EGGG A/C COMM EGGE SUPFORT CGGG SUPFORT CGGGG SUPFORT CGGGG SUPFORT CGGGG SUPFORT CGGGG SUPFORT CGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGGG	OPEN 131
THE DEA RANGING DRUG ENF AGY 3 U.S. 4/76- 306 VHF DRAKE SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 232 VHF EGGG A/C COMM EGGG 1 U. HEMIS. 6/68- 232 VHF EGGG SUPFORT EGGG 1 U. HEMIS. 6/68- 232 VHF ENGLAND MARITIME UNITED KINDGOM 3 ATLANTIC B/70- 301 VHF GATE SUPPORT NOAA 3 U/KNOWN 1/74- 228 VHF GE DATA TRANS GE 1 BERMUDA 2/69- 228 VHF GE MARITIME GE 1 BERMUDA 2/69- 228 VHF GE RANGING GE 1 BERMUDA 2/69- 228 VHF GE DATA TRANS GE 3 BERMUDA 2/69- 228 VHF GE MARITIME GE 3 BERMUDA 2/69- 228 VHF GE RANGING GE 3 BERMUDA 2/69- 228 VHF GE RANGING GE 3 BERMUDA 2/69- 228 VHF GE RANGING GE 3 BERMUDA 2/69- 235 VHF HAWAII EDUCATION PEACESAT 1 PACIFIC 2/72- 235 VHF HAWAII EDUCATION PEACESAT 1 PACIFIC 2/72- 236 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 284 VHF HIGH NOTE RANGING SANDIA/AEC 3 U.S. 3/71- 284 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 284 VHF HIGH NOTE RANGING SANDIA/AEC 3 U.S. 3/71- 230 VHF HIGH NOTE RANGING SANDIA/AEC 3 U.S. 3/71- 231 VHF MSFN PROP WAVE PROP MSFN NETWORK 3 W. HEMIS. 9/70- 238 VHF NBS TIME/FREQ NAT BUR OF STDS 3 W. HEMIS. 8/71- 238 VHF NBS TIME/FREQ NAT BUR OF STDS 3 W. HEMIS. 8/71- 239 VHF NBS TIME/FREQ NAT BUR OF STDS 3 ATLANTIC 8/70- 242 VHF NIAID MEDICAL HIAID 1 PACIFIC 10/73- 242 VHF NIAID MEDICAL LISTER HILL 1 U.S. (N.W.) 10/71- 242 VHF NLM MEDICAL LISTER HILL 1 U.S. (N.W.) 10/71-	OPEN 131
SUPPORT TEXAS AGM 3 ANTARCTICA 1/75- 232 VHF EGGG A/C CUMM EGGE 1 U. HEMIS. 6/68- 232 VHF EGGG SUPPORT EGGE 1 U. HEMIS. 6/68- 232 VHF EGGG SUPPORT EGGE 1 U. HEMIS. 6/68- 232 VHF ENGLAND MANITIME UNITED KINDGOM 3 ATLANTIC 8/70- 230 VHF GE SUPPORT NOAA 3 UWMNOWN 1/74- 228 VHF GE DATA TRANS GE 1 BERMUDA 2/69- 228 VHF GE RANGING GE 1 BERMUDA 2/69- 228 VHF GE RANGING GE 3 BERMUDA 2/69- 235 VHF HAWAII EDUCATION PÉACESAT 1 PACIFIC 2/72- 235 VHF HAWAII MEDICAL PEACESAT 1 PACIFIC 2/72- 235 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 284 VHF HIGH NOTE RANGING SANDIA/AEC 3 U.S. 3/71- 300 VHF IHCHIS MEDICAL INCHIS 1 ALASKA S/74- 231 VHF HSFN PROP WAVE PROP MSFN NETWORK 3 W. HEMIS. 9/70- 238 VHF NBS TIME/FREQ NAT BUR OF STDS 3 W. HEMIS. 8/71- 230 VHF NBS TIME/FREQ NAT BUR OF STDS 3 W. HEMIS. 8/71- 231 VHF NBS TIME/FREQ NAT BUR OF STDS 3 W. HEMIS. 8/71- 232 VHF NIAID MEDICAL LISTER HILL 1 U.S.(N.W.) 10/71- 232 VHF NLM MEDICAL LISTER HILL 1 U.S.(N.W.) 10/71- 233 VHF NLM MEDICAL LISTER HILL 1 U.S.(N.W.) 10/71-	OPEN 131
232 VHF EGEG SUPFORT EGEG 1 W. MEMIS. 6/68- 225 VHF ENGLAND MARITIME UNITED KINDGOM 3 ATLANTIC 8/70- 301 VHF GATE SUPPORT NOAA 3 UVKNOWN 1/74- 228 VHF GE DATA TRANS GE 1 BERMUDA 2/69- 228 VHF GE RANGING GE 1 BERMUDA 2/69- 228 VHF GE RANGING GE 3 BERMUDA 2/69- 228 VHF GE DATA TRANS GE 3 BERMUDA 2/69- 228 VHF GE HARITIME GE 3 BERMUDA 2/69- 228 VHF GE RANGING GE 3 BERMUDA 2/69- 228 VHF GE RANGING GE 3 BERMUDA 2/69- 228 VHF GE RANGING GE 3 BERMUDA 2/69- 235 VHF HAVAII EDUCATION PEACESAT 1 PACIFIC 2/72- 235 VHF HAVAII EDUCATION PEACESAT 1 PACIFIC 2/72- 284 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 284 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 284 VHF HIGH NOTE RANGING SANDIA/AEC 3 U.S. 3/71- 284 VHF HIGH NOTE RANGING SANDIA/AEC 3 U.S. 3/71- 284 VHF HIGH NOTE RANGING SANDIA/AEC 3 U.S. 3/71- 285 VHF NBS TIME/FREQ NAT BUR OF STDS 3 W. HEMIS. 9/70- 236 VHF NBS TIME/FREQ NAT BUR OF STDS 3 W. HEMIS. 8/71- 237 VHF NBS TIME/FREQ NAT BUR OF STDS 3 W. HEMIS. 8/71- 238 VHF NBS TIME/FREQ NAT BUR OF STDS 3 W. HEMIS. 8/71- 239 VHF NAID MEDICAL NIAID 1 PACIFIC 10/73- 242 VHF NLM MEDICAL LISTER HILL 1 U.S.(N.W.) 10/71- 242 VHF NLM MEDICAL LISTER HILL 1 U.S.(N.W.) 10/71- 243 VHF NLM GOMPUTER LISTER HILL 1 U.S.(N.W.) 10/71-	OPEN 428
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228 VHF GE RANGING GE 1 BERMUDA 2/69- 228 VHF GE DATA TRANS GE 3 BERMUDA 2/69- 228 VHF GE DATA TRANS GE 3 BERMUDA 2/69- 228 VHF GE MARITIME GE 3 BERMUDA 2/69- 228 VHF GE RANGING GE 3 BERMUDA 2/69- 235 VHF HAWAII EDUCATION PEACESAT 1 PACIFIC 2/72- 235 VHF HAWAII MEDICAL PEACESAT 1 PACIFIC 2/72- 284 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 284 VHF HIGH NOTE RANGING SANDIA/AEC 3 U.S. 3/71- 300 VHF IHCHIS MEDICAL IHCHIS 1 ALASKA 5/74- 231 VHF MSFN PROP WAVE PROP MSFN NETWORK 3 W. HEMIS. 8/71- 238 VHF NBS TIME/FREQ NAT BUR OF STDS 3 W. HEMIS. 8/710- 238 VHF NBS TIME/FREQ NAT BUR OF STDS 3 W. HEMIS. 8/710- 239 VHF NB MARITIME NETHERLANDS 3 ALANTIC 8/70- 240 VHF NETHERLAND MARITIME NETHERLANDS 1 PACIFIC 10/73- 241 VHF NB MEDICAL LISTER HILL 1 U.S.(N.W.) 10/71- 242 VHF NLM MEDICAL LISTER HILL 1 U.S.(N.W.) 10/71-	8/71 - 41
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264 VHF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71- 264 VHF HIGH NOTE RANGING SANDIA/AEC 3 U.S. 3/71- 300 VHF IHCHIS MEDICAL IHCHIS 1 ALASKA 5/74- 231 VHF HSFN PROP WAVE PROP MSFN NETWORK 3 W. HEMIS. 9/70- 238 VHF NBS TIME/FREQ NAT BUR OF STDS 3 W. HEMIS. 8/71- 246 VHF NETHERLAND MARITIME NETHERLANDS 3 ATLANTIC 8/70- 255 VHF NIAID MEDICAL MIAID 1 PACIFIC 10/73- 262 VHF NLH MEDICAL LISTER HILL 1 U.S.(N.W.) 10/71- 262 VHF NLH COMPUTER LISTER HILL 1 U.S.(N.W.) 10/71-	OPEN 6942
284 VHF HIGH NOTE RANGING SANDIA/AEC 3 U.S. 3/71- 300 VHF IHCHIS MEDICAL IHCHIS 1 ALASKA 5/74- 231 VHF MSFN PROP WAVE PROP MSFN NETWORK 3 W. HEMIS. 9/70- 238 VHF NBS TIME/FREQ NAT BUR OF STDS 3 W. HEMIS. 8/71- 226 VHF NETHERLAND MARITIME NETHERLANDS 3 ATLANTIC 8/70- 295 VHF NIAID MEDICAL HIAID 1 PACIFIC 10/73- 282 VHF NLM MEDICAL LISTER HILL 1 U.S.(N.W.) 10/71- 282 VHF NLM COMPUTER LISTER HILL 1 U.S.(N.W.) 10/71-	6/72 5
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238 VMF NBS TIME/FREQ NAT BUR OF STDS 3 W. HEMIS. 8/71- 226 VMF NETHERLAND MARITIME NETHERLANDS 3 ATLANTIC 8/70- 295 VMF NIAID MEDICAL NIAID 1 PACIFIC 10/73- 262 VMF NLM MEDICAL LISTER HILL 1 U.S.(N.W.) 10/71- 262 VMF NLM COMPUTER LISTER HILL 1 U.S.(N.W.) 10/71-	2/71 22
226 VHF NETHERLAND MARITIME NETHERLANDS 3 ATLANTIC 8/70-295 VHF NIAID MEDICAL NIAID 1 PACIFIC 10/73-262 VHF NLM MEDICAL LISTER HILL 1 U-S-(N-W-) 10/71-262 VHF NLM COMPUTER LISTER HILL 1 U-S-(N-W-) 10/71-	
295 VHF NIAID MEDICAL NIAID 1 PACIFIC 10/73- 282 VHF NLM MEDICAL LISTER HILL 1 U.S.(N.W.) 10/71- 282 VHF NLM COMPUTER LISTER HILL 1 U.S.(N.W.) 10/71-	12/71 265
262 VHF NLM MEDICAL LISTER HILL 1 U.S.(N.W.) 10/71- 262 VHF NLM COMPUTER LISTER HILL 1 U.S.(N.W.) 10/71-	OPEN 237
262 WHF NLM COMPUTER LISTER HILL 1 U-S-(N-W-) 10/71-	OPEN 619
253 VHF NORWAY METEOR. NORWAY 3 N. ATLANTIC 11/70-	OPEN 619
	2/71 22
233 YHF NORWAY RANGING NORWAY 3 N. ATLANTIC 11/70-	2/71 22
307 VHF OCEAN SUPPORT U. OF HIAMI 3 ATLANTIC 12/77-	OPEN 2241
	OPEN 158
335 VHF SAR SIM RANGING BAKER DEV CORP 3 BERMUDA 6/77-	9/77 15
287 VHF SEEK METEOR. SIERRA RES CORP 3 U.S. 1/72-	12/72
285 VHF STANFORD EDUCATION STANFORD UNIV 1 U.S. (WEST) 5/71-	6/72 2
285 YHF STANFORD EDUCATION STANFORD UNIV 3 U-S-(WEST) 5/71-	
283 VHF UCLA EDUCATION UCLA 3 U.S.(WEST) 9/71-	10/71 15
283. VHF UCLA EDUCATION TRU 3 U-S-(MEST) 9/71-	10/71 15
297 VHF USP/FIJI EDUCATION U. SO. PACIFIC 1 PACIFIC 1/74-	OPEN 2667
239 VHF VANGUARD DATA TRANS USCE 1 ATLANTIC 6/68-	7/69 12
239 VHF VANGUARD CONFERENCE USCG 1 ATLANTIC 6/68-	* * * * * * * * * * * * * * * * * * *
239 VHF VANGUARD DATA TRANS USCG 3 ATLANTIC 6/68-	
239 VHF VANGUARD CONFERENCE USCG 3 ATLANTIC 6/68-	7/69 12 10/74 28

[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

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291	VHF ZURITA	SUPPORT	AEC	1	ALASKA/HAW.	6/73-12/73	62	
602	VHRR RADIOMETER	METEOR.	NASA/GSFC	6	U.S.	6/74- 9/74	360	
CTS-Z6	YLDI	TIME/FREG	UNIV OF ILL	CTS	U.S./CANADA	5/78-12/78	120	
163	WEFAX	METEOR.	NOAA	1	MORLD	3/69- OPEN	5957	
183	HEFAX	DATA TRANS	NOAA	ī	HORLD	3/69- OPEN	5957	
183	HEFAX	METEOR.	NGAA	3	HORLD	3/69- OPEN	3943	
183	WEFAX	DATA TRANS	NOAA	3	HORLD	3/69- OPEN	3943	
322	HHOI	SUPPORT	WOODS HOLE INST	3	PACTFIC	1/77- 2/77	244	
CTS-33	WIDE BAND COMM.	CONFERENCE	STE LABS	CTS	U.S.	1/79- OPEN	4	
CTS-27	HOMENS SAT SER	CONFERENCE	NAT WOMENS AS	275	U.S.	PENDING	č	
CTS-31	3 WAY TIME TRAM	TIME/FREQ	U.S. NAVAL OBS.	CTS	U-S-/CANADA	1/79- 7/79	č	



3.3 Soried by Category

ID#	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRŚ •
281	LOS ALAMOS	A/C COMM	EGEG	1	W. HEMIS.	10/70-10/71	265
185	VHF A/C	A/C COMM	ARINC	1	U.S.	1/67- 6/70	264
185	VHF A/C	A/C COHM	ARINC	74	U.S.	1/67- 6/70	304
232	VHF EGEG	A/C COMM	EG C6	1	W. HEMIS.	6/68-10/72	48
661	ALFE	BROADCAST	PSSC	6	ALASKA	9/77-10/78	1979
331	PLU	BROADCAST	PROJECT LOOK-UP	13	PUERTO RICO	1/76- OPEN	87
660	PLÚ	BROADCAST	PROJECT LOOK-UP	6	SO-AMERICA	1/76- 7/79	191
672	SAMPE	BROADCAST	PSSC.	6	SAHOA	9/77- 2/78	444
340	SANOA TV SANFE	BROADCAST	PSSC	1	SAMOA	9/77- OPEN	53
340	SANGA TV SAMPE	BROADCAST	PSSC	3	SAMÓÀ	9/77- OPEN	76
647	SITE	BROACCAST	INDIA	6	INDIA	8/75- 8/76	2171
5 E S	U. OF W. INDIES	BROADCAST	DEPT OF ST/AID	6	WEST INDIES	10/70- 7/79	66
677	IHS	COMPUTER	INDIAN HLTH SER	6	ALASKA	9/78- 7/79	0
305	VHF ALOHA	COMPUTER	U. OF HAWAII	1	PACIFIC	72- OPEN	1167
202	VHF NLM	COMPUTER	LISTER HILL	1	U-S-(N-H-)	10/71- OPEN	619
312	ALC	CONFERENCE	AMER LUTHERAN C	1	U.S.	6/76- OPEN	219
CTS-25	CONGRESS	CONFERENCE	GEO WASH UNIV	CTS	HARYLAND	4/77- 8/78	39
338	DISP	CONFERENCE	DEPT OF INTER	1	PACIFIC	12/77- OPEN	1453
321	FLTAC	CONFERENCE	DEPT OF NAVY	3	U. HEMIS.	1/77- OPEN	391
677	IHS	CONFERENCE	INDIAN HLTH SER	6	ALASKA	9/78- 7/79	. 0
CTS-18	INTRANASA COMM	CONFERENCE	NASA/GSFC	CTS	u.s.	5/76- OPEN	382
CTS-18	INTRANASA COMM	CONFERENCE	NASA/LERC	CTS	U.S.	5/76- OPEN	382
CTS-18	INTRANASA COMM	CONFERENCE	NA SA/ARC	CTS	u.s.	5/76- OPEN	362
CT5-26	PROJ ADJUNCT	CONFERENCE	SAT BUS SYSTEMS	CTS	VIRGINIA	9/77- 2/78	178
248	SP L-BAND	CONFERENCE	AII	5	U.S.	8/74- 4/75	135
CTS-15	TELECONFERENCE	CONFERENCE	WESTINGHOUSE	CTS	U.S.(EAST)	2/76- OPEN	286
310	VHF DEA	CONFERENCE	DRUG ENF ABY	3	U.S.	4/76- OPEN	131
310	VHF DEA	CONFERENCE	GE	3	U.S.	4/76- OPEN	131
239	VHF VANGUARD	CONFERENCE	USCG	1	ATLANTIC	6/68- 7/69	12
239	VHF VANGUARD	CONFERENCE	USCG	3	ATLANTIC	4/68-10774	28
CTS-33	WIDE BAND COMM.	CONFERENCE	GTE LABS	CTS	U.S.	4/79- OPEN	6
CTS-27	WOMENS SAT SER	CONFERENCE	NAT WOMENS AG	CTS	U.S.	PENDING	0
661	ALFE	DATA TRANS	PSSC	6	ALASKA	9/77-10/78	1979
CTS-24	DICE	DATA TRANS	NASA/LERC	CTS	U-S-(EAST)	6/77- OPEN	131
CTS~24	OICE	DATA TRANS	COMSAT LABS	CTS	U.S. (EAST)	5/76- OPEN	131
318	ORI	DATA TRANS	DESERT RES INST	1	ANTARCTICA	12/76- 1/77	10
318	ORI	DATA TRANS	DESERT RES INST	3	ANTARCTICA	12/76- 1/77	627
315	ERDA	DATA TRANS	ERDA	1	PACIFIC	1/78- 1/79	196
315	ERDA	DATA TRANS	ERDA	3	PACIFIC	7/76- 8/76	5
620	GEOS-C	DATA TRANS	NASA/GSFC	6	WORLD	9/74- 7/79	894
293	GE/EXXON	DATA TRANS	GE & EXXON	1	ATLANTIC	7/73- 2/74	90
293	GELEXXON .	DATA TRANS	GE & EXXON	3	ATLANTIC	7/73- 2/74	186
288	GE/HARAD	DATA TRANS	GE	1	ATLANTIC	4/72- 5/72	· 7
288	GE/MARAD	DATA TRANS	6E	3	ATLANTIC	4/72- 5/72	46
C12-52	ICE FLOW	DATA TRANS	NASA/LERC	CTS	ALASKA	8/76- 9/76	70
251	L-BAND DOT	DATA TRANS	BOEING	3	N. AMERICA	4/74-10/76	128
249	MARAD	DATA TRANS	MARAD	5	W. HEMIS.	3/70-12/71	65
249	HARAD	DATA TRANS	AII	5	W. HEMIS.	3/70-12/71	65
264	MARAD/AII/PLACE	DATA TRANS	AII	3	WORLD	1/73- OPEN	131
264	HARAD/AII/PLACE	DATA TRANS	AII	5	WORLD .	1/73- OPEN	912
210	HSSCC	DATA TRANS	NOAA	1	WORLD	3/69- 6/72	7
216	MSSCC	DATA TRANS	NOAA	3	WORLD	3/69- OPEN	26966
605	PLACE	DATA TRANS	NASA	6	U.S.	9/74- 6/75	967
CTS-26	PROJ ADJUNCT	DATA TRANS	SAT BUS SYSTEMS	CTS	VIRGINIA	9/77- 2/78	178
CTS-19	SAT. DIST.	DATA TRANS	SECA	CTS	U-S-(SOUTH)	12/76- OPEN	655

[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

IDe	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS	٠
246	SP L-BAND	DATA TRANS	AII	5	U.S.	8/74- 4/75	175	
205	SSCC	DATA TRANS	NOAA	1	WORLD	3/69- OPEN	8372	
205	SSCC	DATA TRANS	NOAA	3	HORLD	3/69- OPEN	20	
617	TORE	DATA TRANS	NASA/GSFC	. 6	HORLD	9/74- 7/79	622	
616	TRUST	DATA TRANS	NASA/GSFC	6	U.S.	9/74- 7/75	40	
265	VANGUARD	DATE TRANS	USCG	3	ATLANTIC	3/72- 4/73	2.6	
265	VANGUARD	DATA TRANS	USCG	3	PACIFIC	3/72- 4/73	78	
201	MHF CALYPSO	DATA TRANS	COUSTEAU GROUP	3	ANTARCTICA	6/72- 1/76	358	
228	VHF GE	DATA TRANS	GE	1	BERMUDA	2/69- 6/71	41	
224	VHF GE '	DATA TRANS	GE	3	BERMUDA	2/69- 8/71	142	
239	VHF VANGUARD	DATA TRANS	USCE	1	ATLANTIC	6/68- 7/69	12	
239	VHF VANGUARD	DATA TRANS	USCS	3	ATLANTIC	6/68-10/74	28	
103	WEFAX	DATA TRANS	NOAA	1	MORLD	3/69- OPEN	5957	
183	WEFAX	DATA TRANS	NOAA	3	HORLD	3/69- OPEN	3943	
639	ALL DEMO	DENO	NASA	6	U.S.	6/79- 7/79	322	
311	GSFC	DEMO	NASA/GSFC	3	U.S.(EAST)	7/76- OPEN	1705	
CTS-21	PSSC	DEMO	PSSC	CTS	U.S.	2/77- OPEN	284	
CTS-12	AESP II	EDUCATION	APP. REG. COMM.	CTS	APPALACHIA	PENDING	0	
667	ALVA	EDUCATION	PSSC	6	ALASKA	9/77- 7/79	69	
667	ALVA	EDUCATION	PSSC	6	U.S. (MEST)	· 9/77- 7/79	67	
CTS-07	BIOMED COMMUN	EDUCATION	LISTER HILL	CTS	U-S-	6/77- OPEN	404	
CTS-04	COLLEGE CURR	EDUCATION	STANFORD UNIV	CTS	U.S./CANADA	2/76- OPEN	446	
CTS-04	COLLEGE CURR	EDUCATION	CARLETON UNIV	CTS	U-S-/CANADA	2/76- OPEN	446	
CTS-13	DECENT HED ED	EDUCATION	WAMI	CTS	ALASKA/VASH	3/77- OPEN	292	
CTS-13	DECENT MED ED	EDUCATION	U OF WASHINGTON	CTS	ALASKA/WASH	3/77- OPEN	292	
CTS-17	HEALTH ED TV	EDUCATION	ASSOC OF W HOSP	CTS	ROCKY MTNS	PENDING	0	
CTS-11	HEALTH/COMMUN	EDUCATION	VETERANS ADM	CTS	U.S. (WEST)	6/77- OPEN	306	
227	HET ALASKA	EDUCATION	ST. OF ALASKA	1	ALASKA	6/69- OPEN	11314	
227	HET ALASKA	EDUCATION	NAT EDUC ASSOC	1	H. HEMIS.	6/69- OPEN	11314	
286	HET (ARC)	EDUCATION	APP. REG. COMM.	3	APPALACHIA	6/74- OPEN	536	
612	HET (ARC)	EDUCATION	ST. OF ALASKA	6	ALASKA	6/74- 6/75	1741	
612	HET (ARC)	EDUCATION	ROCKY MIN SIS	6	ROCKY MTNS	6/74- 6/75	1741	
612	HET (ARC)	EDUCATION	APP. REG. COMM.	6	APPALACHIA	6/74- 6/75	1741	
612	HET (ARC)	ÉDUCATION	VETERANS ADM	6	APPALACHIA	6/74- 6/75	1741	
612	HET (ARC)	EDUCATION	MANI	6	alaska/Wash	6/74- 6/75	1741	
302	NEA	EDUCATION	NAT EDUC ASSOC	1	appal/alask	1/76- 4/77	39	
302	NEA	EDUCATION	NAT EDUC ASSOC	3	APPAL/ALASK	1/76- 4/77	76	
673	NIE	EDUCATION	APP. REG. COMM.	6	appalachia	1/78- 7/79	3	
337	PLU	EDUCATION	PROJECT LOOK-UP	3	PUERTO RICO	1/76- OPEN	87	
660	PLU	EDUCATION	PROJECT LOOK-UP	•	SO-AMERICA	1/76- 7/79	141	
CTS-16	PROJ INTERCHG	EDUCATION	ARCH OF S.F.	CTS	CALIFORNIA	3/76- 6/78	45	
CTS-09	SALINET	EDUCATION	SALINET	CTS	U.S.	10/77- 4/78	10	
350	SAMOA	EDUCATION	U. SO. PACIFIC	1	SAMOA	1/77- OPEN	258	
647	SIYE	EDUCATION	INDIA	6	INDIA	8/75- 8/76	2171	
670	TEAN	EDUCATION	HONTANA ST U	6	MONTANA	9/77- 7/79	2	
CTS-29	UNIV GRAD STUDY	EDUCATION	VARIAN ASSOC	CTS		5/78-12/78	49	
	U. OF W. INDIES	EDUCATION	DEPT OF ST/AID		JAMA ICA	1/78- 6/78	223	
663	U. OF W. INDIES	EDUCATION	DEPT OF ST/AID	6	WEST INDIES	10/78- 7/79	66	
236	VHF BRAZIL	EDUCATION	STANFORD UNIV	3	W. HEMIS.	2/70- OPEN	38	
235	VHF HAVAII	EDUCATION	PEACESAT	1	PACIFIC	2/72- OPEN	6942	
285	VHF STANFORD	EDUCATION	STANFORD UNIV	1	U.S. (WEST)	5/71- 6/72	2	
285	VHF STANFORD	EDUCATION	STANFORD UNIV	3	U.S. (WEST)	5/71-6/72	139	
283	VHF UCLA	EDUCATION	UCLA	3	U-S-(WEST)	9/71-10/71	15	
283	VHF UCLA	EDUCATION	TRU TO MACTETO	3	U.S.(WEST)	9/71-10/71	15	
297	VHF USP/FIJI	EDUCATION	U. SO. PACIFIC	1	PACIFIC	1/74- OPEN	2667	

[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

IDS	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS	•
CT5-20	ADV GRD REC EG	SRO TERM	NASA/03FC	CTS	U.S.	4/74- 4/78		
CTS-T	TEP/SHF	GRO TERM	NASA/LERC	CTS	OHIO	2/76- OPEN	137	
CT5-30	TER OF TOHORROW	GRO TERM	FCC	CTS	U.S.	3/70-12/76	36	
CT5-06	TET/COMSAT	GRO TERM	COMSAY LABS	CYS	U.S. (EAST)	2/76- OPEN	266	
254	SHF SEARCH	LAW ENFORC	PUBLIC SYST INC	î.	u.s.	12/71-12/71	68	
293	SE/EXXON	MARITINE	GE E EXXON	i	ATLANTIC	7/73- 2/74	90	
542	GE/EXXON	MARTTIME	GE & EXXON	Š	ATLANTIC	7773- 2774	186	
268	SE/MARAD	MARITIME	32	ì	ATLANTIC	4/72- 5/72	7	
200	SE/MARAD	MARITIME	GC :	Ĭ	ATLANTIC	4/72- 5/72	46	
249	MARAD	MARTTIME	MARAD	Š	W. HENIS.	3/70-12/71	65	
244	MARAD	MARITIME	ZIA	5	W. HEHIS.	3/70-12/71	45	
264	HARAD/AII/PLACE	MARITIHE	AII	3	HORLD	1/73- APEN	131	
264	MARAD/AII/PLACE	HARITINE	AII	5	WORLD	1273- OPEN	712	
225	VHF ENGLAND	MARITIME	UNITED KINDSOM	. 3	ATLANTIC	8270-12/70	171	
228	VHF GE	MARITIME	39	1	BERHUDA	2/69- 8/71	41	
223	YHF GE	BARITIME	38	3	BERHUDA	2/69- 8/71	142	
226	VHF NETHERLAND	MARITIME	NETHERLANDS	3	ATLANTIC	4/70-12/71	265	
667	ALVÄ	MEDICAL,	PSSC	•	ALASKA	4/77- 7/79	49	
667	ALVA	MEDICAL	PSSG	6	U.S. (MEST)	9/77- 7/79	69	
344	BARBADOS	MEDICAL	DEPT OF ST/AID	3	BARRADOS	8/78- 9/78	14	
CTS-07	BIONED COMMUN	HEDICAL	LISTER HILL	CTS	U.S.	4/77- OPEN	404	
CTS-35	CT SCANNING NET	HEDICAL	U. OF COLORADO	CTS	U.S. (MEST)	4/74- 7/79	0	
102	DATA XHISSION	MEDICAL	DUKE U. HED CEN	1	U.S. (EAST)	11/71-11/71	54	
CTS-13	DECENT HED ED	MEDICAL	HANT	CTS	ALASKA/WASH	3/77- OPEN	292	
CTS-17	HEALTH ED TV	MEDICAL	ASSOC OF M HOSP	CTS	ROCKY HTNS	PENDING	٥	
CTS-11	HEALTH/COMMUN	MEDICAL	VETERANS ADM	CTS	U.S. (VEST)	6/77- OPEN	306	
227	HET ALASKA	MEDICAL	ST. OF ALASKA	1	ALASKA	6/69- OPEN	11314	
612	HET (ARC)	MEDICAL	INDIAN HLTH SER	6	ALASKA	6/74- 6/75	1741	
612	HET (ARC)	MEDICAL	VETERANS ADM	6	APPALACHIA	6/74- 6/75	1791	
612	HET (ARC)	HEDICAL	ZHAU	6	ALASKA/WASH	6/74- 6/75	1741	
677	IHS	MEDICAL	INDIAN HLTH SER	6	ALASKA	9/78- 7/79	0	
671	MSH	MEDICAL	HTN STS HTH COR	•	ROCKY MINS	3/75- 5/75	22	
316	NSTL.	MEDICAL	SO NEO MED CONS	3	U.S. (50UTH)	10/76-10/76	71	
316	NSTL	MEDICAL	NAT SP TECH LAB	3	U.S. (SOUTH)	10/76-10/76	71	
235	YMF MAUAII	MEDICAL	PEACESAT	1	PACIFIC	2/72- OPEN	6992	
300	YHF IHCHIS	MEDICAL	IHCHIS	1	ALASKA	5/74- 5/74	2	
295	NHE HIAID	MEDICAL	NIAID	1	PACIFIC	10/73- OPEN	237	
262	YHE NLH	MEDICAL	LISTER HILL	1	U.S. (N.W.)	10/71- OPEN	619	
219	DRI	METEOR.	DESERT RES INST	1	ANTARCTICA	12/76- 1/77	10	
279	DRI	HETEOR.	DESERT RES INST	3	ANTARCTICA	12/76- 1/77	627	
511	IDCS	METEOR.	NOAA	3	U.S.	11/67-10/72	1050	
570	MSSCC	HETEOR.	NOAA	1	WORLD	3/69- 6/72	7.	
570	MSSCC	METEOR.	NOAA	3	WORLD	3/69- OPEN	26766	
205	SSCC	HETEOR.	NOAA	1	WORLD	3/49- OPEN	8372	
205	SSCC	HETEOR.	NOAA	2.	WORLD	3/49- OPEN	20	
522	WHE NORWAY	METEOR.	NORWAY	3	N. ATLANTIC	11/70- 2/71	22	
287	VHF SEEK	METEOR.	SYERRA RES CORP	2	U.2.	. 1/72-12/72	•	
602	VHRR RADIOMETER	METEOR.	NASA/6SFC	•	U.S.	6/74- 9/74	340	
103	WEFAX	HETEOR.	AACH	7	MORLD	3/67- OPEN	5957	
183		METEOR.	NOAA	3	WORLD	3/69- OPEN	3943	
247	ALPHA-2	RANGING	USAF/SAMSO	5	ATLANTIC	7/70- 2/71		
247	ALPHA-2	RANGING	AXX	5	ATLANTIC	7/70- 2/71		
657	CRC	RANGING	CANADA/CRC	•	CANADA	9/74- 8/77	138	
261	GE L-BANO	RANGING	GE	1	N. AMERICA	6/70-10/72	1	
261	GE L-BAND	RANGING	QE	3	N. AMERICA	6/70-10/72	51	

⁻ ATS SCHEDULED TIME/CTS ACTUAL TIME

10.	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS =
261	GE L-BAND	RANGING	GE	5	N. AMERICA	6/70- 6/73	192
474	GE L-BAND	RANGING	32	6 .	U.S. (EAST)	12/77- 7/79	573
542	SE/EXXON	RARGING	BE E EXXON	1	ATLANTIC	7/73- 2/74	•0
293	GE/EXXON	RANGING	BE 6 EXXON	3	ATLANTIC	7/73- 2/74	186
234	SE/FAA	RANGING	38 //	1	N. ATLANTIC	11/69- 6/71	
234	SE/FAA	RANGING	- SE //	3	N. ATLANTIC	11/69- 6/71	
288	BE/MARAD	RANGING	38	ì	ATLANTIC	4/72- 5/72	7
288	GE/MARAD	RANGING	38	3	ATLANTIC	4/72- 5/72	
251	L-BAND DOT	RANGING	BOEING	5	N. AMERICA	2/710 7/74	557
252	L-BAND FAA	RANGING	FAA	5	N. AMERICA	4/71- 4/72	275
252	L-BANG FAA	RANGING	BOETNG	5	N. AMERICA	4/71- 4/72	275
250	L-BAND RANGING	RANGING	VESTINGHOUSE	ì	U.S. (VEST)	2/71- 5/71	
250	L-BAND RANGING	RANGING	DESTINGHOUSE	3	U.S. (NEST)	2/71- 5/71	Ö
2\$0	L-BAND RANGINS	RANSING	BEUDHENITZBE	Š	U.S. (WEST)	2/71- 5/71	۹Ÿ
268	L-BAND TRILAT	RANGING	38	1	U.S.	1/74- 1/76	19
268	L-BAND TRILAT	RANGING	5 E	3	U.S.	1/74- 1/74	78
268	L-BAND TRILAT	RANGING	SE .	5	u.S.	1/79- 1/76	172
244	HARAD	RANGING	ÄĪĪ	Š	W. HENTS.	3/70-12/71	65
264	HARAD/AIT/PLACE	RANGING	AXX	5	BORLD	1/73- OPEN	912
605	PLACE	RANGING	NASA	- Ä	Ü.S.	9/74- 6/75	767
664	SAR L-BAND C/O	RANGING	FAA	: 👗	N. ATLANTIC	8/74= 4/75	13
654	SAR L-BAND C/O	RANGING	BOEING	ě	N. ATLANTIC	8/79- 4/75	13
310	STRIUS	RANGING	BAKER DEV CORP	3	BERHUDA	12/76- 1/77	40
246	SSRA	RANGING	WESTINGHOUSE	5	U.S. (NEST)	4/71- 5/71	ĩ
245	VANGUARD	RANGING	USCE	Š	ATLANTIC	3/72- 4/73	222
265	VANGUARD	RANGING	USCG	5	PACIFIC	3/72- 4/73	232
310	VHF DEA	RANGING	30	3	U.S.	4/TE- OPEN	131
370	VHF DEA	RANGING	DRUG ENF AGY	3	0.5.	4/76- OPEN	131
228	VHF GE	MANGING	GE .	1	BERHUDA	2/69- 8/71	41
228	VHF GE	RANGING	GE .	ž	BERMUDA	2/69- 6/71	142
284	VHF HIGH NOTE	RANGING	SANDIAZAEC	i	U.S.	3/71- 6/72	Š
284	VHF HIGH NOTE	RANGING	SANDIA/AEC	3	U.S.	3/71- 6/72	5
522	VHF NORWAY	RANGING	NORWAY	3	N. ATLANTIC	11/70- 2/71	22
335	VHF SAR SIM	ranging	BAKER DEV CORP	3	BERHUDA	6/77- 9/77	13
620	SEOS-C	SAT CONTRL	NASA/ESFC	•	MORLD	9/74- 7/79	874
607	IHDRAS	SAT CONTRL	NASA/GSFC	6	U.S.	6/74- 7/75	5
610	INTERFEROMETER	SAT CONTRL	NASA/GSFC	•	U.S.	6/74=11/76	104
604	SAPPSAC	SAT CONTRL	NASA/GSFC	i	U.S.	6/74- 1/75	72
617	TORE	SAT CONTRL	NA SA/GSFC	ä	MORLD	9/74- 7/79	622
211	IDCS	SAT PHOTOS	NOAA	3	U.S.	11/67-10/72	1050
43 <i>1</i>	ENV MEAS EXP	SCIENTIFIC	NASAZGSFC	6	U.S.	6/79- 7/77	30
650	HAG DATA	SCIENTIFIC	UCLA:	6	U.S.	5/75- 6/76	402
649	MAG FIELD STUDY	SCIENTIFIC	NASA/GSFC	•	U.S.	4/75- 6/75	295
666	UNFINEL	SCIENTIFIC	NAVAL RES LAB	i i	u.s.	9/77- 5/78	1.8
640	APOLLO-SOYUZ	SUPPORT	NASA/HOUSTON	•	WORLD	10/74- 7/75	333
332	ENDEAVOR	SUPPORT	U. OF RHODE ISL	3	ATLANTIC	7/77- 1/78	164
315	ERDA	SUPPORT	ERDA	1	PACIFIC	1/78- 1/79	146
315	ERDÁ	SUPPORT	EPUA	3	PACIFIC	7/76- 6/76	5
334	ERDA/DOD	SUPPORT	ERDA	1	ENEWETAK	10/77- 9/78	** 4 9
674	GE L-BAND	SUPPORT	GC	6	U.S. (EAST)	12/77- 7/79	573
325	GYRE	SUPPORT	TEXAS ACM	3	L. HEMIS.	4/77-10/78	315
317	LAMONY	SUPPORT	LAMONT/DOHERTY	Ž	SO. OCEAN	10/76- 3/77	161
100	LAUNCH SUPPORT	SUPPORT	NASA	- 1	U.S.	1/67- 1/76	930
104	LAUNCH SUPPORT	SUPPORT	NASA	3	U.S.	1/67- 6/76	369
109	LAUNCH SUPPORT	SUPPORT	HASA	5	U.S.	3/67-10/72	67

[.] ATS SCHEDULED TIME/CTS ACTUAL TYME

10+	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS
108	LAUNCH SUPPORT	SUPPORT	NASA	6	u.s.	7/77- 2/78	7
330	MONTANA	SUPPORT	ST. OF MONTANA	3	HONTANA "	6/77-11/77	163
329	NORPAX	SUPPORT	U. OF CAL/NAVY	ī	N. PACIFIC	\$/77= 6/77	53
309	NSF .	SUPPORT	TEXAS ACH	ž	ATLANTIC	3/76- 9/76	161
343	ORANGE	SUPPORT	NAT. SC. FOUND.	3	ANTARCTICA	7/74- 4/74	176
342	PERU	SUPPORT	ADVENTURES UNL.	3	PERU	*****	
CTS-21	PSSC				• •	6/78- 7/78	46
324	1.50.01	SUPPORT	PSSC	CTS	U.S.	2/77- OPEN	204
	SIPLE	SUPPORT	STANFORD UNIV	3	W. HENZS.	2/77- OPEN	1196
319	SIRIUS	SUPPORT	BAKER DEV CORP	3	BERMUDA	12/76= 1/77	40
107	SPEC SHF	SUPPORT	• • • • • • • • • • • • • • • • • • •	1 .	W. HEMIS.	68- 70	1929
. 107	SPEC SHF	SUPPORT	<u>6E_</u>	3	b. HENIS.	60- 70	1613
294	SP HET	SUPPORT	HET:	1	U.S.	1/73- 8/77	1654
294	SP HET	SUPPORT	HET .	3	U.S.	1/73- 8/77	1918
202	S/C SUPPORT	SUPPORT	NASA	1	W. HEHIS.	4/69- 70	270
290	VHF BERING SEA	SUPPORT	US/US SR	1	BERING SEA	12/72- 3/73	43
230	VHF B/ION	SUPPORT	MAX PLANCK INST	3	W. HEMIS.	3/71- 9/71	176
520	VHF B/ION	SUPPORT	NASA/WALLOPS	3	W. HEMIS.	3/71- 9/71	176
289	VHF CALYPSO	SUPPORT	COUSTEAU GROUP	3	ANTARCTICA	6/72- 1/76	358
292	VHF CLIRPER	SUPPORT	HOODY COLLEGE	1	ATLANTIC	7/73- 8/77	4
292	VHF CLIPPER	SUPPORT	HOODY COLLEGE	3	ATLANTIC	6/73- 6/77	342
292	VHF CLIPPER	SUPPORT	TEXAS ACH	3	ATLANTIC	6/73- 6/77	342
- 1	VHF DRAKE	SUPPORT	YEXAS ACH	3	ANTARCTICA	1/75- OPEN	424
. 232	VHF EGES	SUPPORT	2383		W. HEMIS.	6/68-10/72	4.8
301	VHF GATE	SUPPORT	NOAA	3	UNKNOUN	1/74= 9/74	
307	VHF OCEAN	SUPPORT	U. OF MIANI	3	7 11 11 7	12/77= OPEN	388
291		SUPPORT		_	ATLANTIC		2241
	VHF ZURITA		AEC	1	ALASKA/HAW.	6/73-12/73	62
322	MHOI	SUPPORT	MOODS HOLE INST	3	PACIFIC	1/77- 2/77	244
253	SHF YLBI	TIME FREQ	SMITHSONIAN INS	1	V.S.	\$/71-10/72	2
253	SHF VLBI	TIME/PREG	RADIO RES LABS	1 .	UAPAN	1/77~ 2/77	5
253	SHF VLBI	TIME/FREG	SMITHSONIAN INS	2,	U.S.	5/71-10/72	170
253	SHF VLBI	TIME/FREQ	RADIO RES LABS	3	PAPAN	1/77- 2/77	190
253	SHF VLBI	TIME/FREQ	SHITHSONIAN INS	5	U.S.	5/71-10/72	0
234	VHF NBS	TIME/FREQ	NAT BUR OF STDS	3	W. MEMIS.	8/71- 8/72	327
304	VHF OPN	TIME/FREQ	RADIO RES LABS	1	PERM	67- OPEN	158
CTS-28	VLBI	TIME/FREQ	UNIV OF ILL	CTS	U-S-/CANADA	5/78-12/78	120
CT5-31	3 WAY TIME TRAN	TIME/FREQ	U-S. NAVAL OBS.	CTS	U-S-/CANADA	3/79- 7/79	0
CT5-01	COMM LINK CHAR	HAVE PROP	NASA/GSFC	CTS	U.S.	2/76-12/77	315
CTS-01	CONN LINK CHAR	WAYE PROP	ONIO STATE U	CTS	OHIO	2/76-12/77	315
CTS-01	COMM LINK CHAR	WAVE PROP	VIRGINIA POLY	CTS	VIRGINIA	2/76-12/77	315
CTS-01	COMM LINK CHAR	MAVE PROP	U. OF TEXAS	CTS	TEXAS	2/76-12/77	315
259	CONSAT C/L PROP	HAVE PROP	CONSAT LABS	5	W. MENIS.	1/72- 4/72	37
638	CONSAT PROP IND	WAVE PROP	CONSAT LABS	6	EUROPE	3/76- 7/76	667
658	CONSAT PROP US	MAVE PROP	CONSAT' LABS		U.S. (EAST)	6/74- 6/78	159
260	CRC C/L-BAND	WAVE PROP	CANADA	Š	CANADA	9/71- 5/72	113
623	L-BAND EXP	WAVE PROP	U. OF PA	- i	U-S-(EAST)	8/76- \/77	787
244	NNU REG 1	HAVE PROP	NA SA / GSTC	Ţ.	N. AMERICA	8/69- 9/71	1866
		WAVE PROP		2	** *****		
245	MMW REG 2		NASA/G%FC	5	No AMERICA	1/67- 7/71	25.0
609	MMW	HAVE PROP	NASA/GSFC	•	U.S.	6/70- 7/79	3271
609	MMV	WAVE PROP	U. OF TEXAS	6	TEXAS	6/74- 7/79	3271
609	MMA	HAVE PROP	ONIO STATE U.	. 6	OHIO	6/79- 7/79	3271
609	MMU	HAVE PROP	COMSAY LABS	67	VIRGINIA	6/74- 7/79	3271
609	MME	MAVE PROP	WESTINGHOUSE	•	MARYLAND	6/74- 7/79	3271
609	MMM	HAVE PROP	NAVAL RES LAB	į.	MARYLAND	6/74- 7/79	3271
609	MMM	WAVE PROP	VIRGINIA POLY	•	VIRGINIA	6/74- 7/79	3271
609	KWA	WAVE PROP	BATTELLE LAB	•	MASHINGTON	6/79- 7/79	3271

[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

IDP	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS	•
609	MMV:	MAVE PROP	BELL LAB	•	NEW JERSEY	6/74- 7/74	3271	
607	MMA	HAVE PROP	ARMY	•	NEW JERSEY	6/74- 7/79	3271	
464	MOTORCLA	HAVE PROP	MOTOROLA	è	U.S.	7/77- 9/78	47	
608	PROPAGATION(E)	HAVE PROP	ESTEC	- i	EUROPE	8/75-10/76	2263	
606	RADIO BEACON	HAVE PROP	NOAA	Ł	U.S.	6/74- 7/75	0	
606	RADIO BEACON	HAVE PROP	NOAA	Ĭ.	EUROPE	6/74- 7/79	. 0	
601	RADIO FRES INT.	MAVE PROP	NASA/GSFC	<u>.</u>	U.S.	6/74-12/76	877	
603	RAD ÁSTRO INTER	MAVE PROP	NASA/GSFC	Ĭ.	MORLO	6/74- 6/75	•	
257	SHF CRC	HAVE PROP	CANADA/CRC	ĭ	CANADA	1/71-12/71	76	
263	TELESAT	HAVE PROP	TELESAT CANADA	ī	CANADA	9/72- 9/72	136	
537	VHF MSFN PROP	MAVE PROP	HSFN NETWORK	3	W. HENIS.	9/70- 2/71	22	

[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

3.4 Sorted by Experimenter

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IDA	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS .
342	PERU	SUPPORT	ADVENTURES UNL.	3	PERU	6/78- 7/78	46
291	VHF ZURITA	SUPPORT	AEC	1	ALASKA/HAW.	6/73-12/73	62
244	SP L-BAND	CONFERENCE	AII	Š	U.S.	6/74- 4/75	135
245	MARAD	DATA TRANS	AII	\$	h. HEMIS.	3/70-12/71	45
264	MARAD/ATT/PLACE	DATA TRANS	ATI	3	HORLD	1/73- OPEN	131
264	HARAD/ATT/PLACE	DATA TRANS	AIR "	Š	MORLD	1/73- OPEN	912
248	SP L-BAND	DATA TRANS	ÄII	5	U.S.	4/74- 4/75	135
249	MARAD	HARITINE	AII	Š	W. HEHIS.	3/70-12/71	45
264	MARAD/AII/PLACE	MARITIME	Alī	3	MORLD	1/73- OPEN	131
244	MARAD/AII/PLACE	MARITIME	AII	Š	MORLD	1/73- OPEN	912
247	ALPHA-2	RANGING	AII	5	ATLANTIC	7/70- 2/71	44
249	HARAD	RANGING	IIA	5	H. HEHIS.	3/70-12/71	45
264	MARAD/AII/PLACE	RANGING	AII	5	VORLD	1/73- OPEN	912
312	ALC	CONFERENCE	AMER LUTHERAN C	1	U.S.	6/76- OPEN	219
CTS-12	AESP II	EDUCATION	APP. REG. CONH.	CTS	APPALACHYA	PENDING	G
286	HET (ARC)	EDUCATION	APP. REG. CONH.	3	APPALACHIA	6/74- OPEN	536
612	HET (ARC)	EDUCATION	APP. REG. CONH.	Ĭ.	APPALACHIA	6/79- 6/75	1741
673	NIE	EDUCATION	APP. REG. COMM.	Ā	APPALACHIA	1/78- 7/79	3
CTS-16	PROJ INTERCHS	EDUCATION	ARCH OF S.F.	CTS	CALIFORNIA	3/76= 6/78	45
185	VHF A/C	A/C COMM	ARINC	1	U.S.	1/67- 6/70	264
185	VHF A/C	A/C COMM	ARING	3	U.S.	1/67- 6/70	30 8
609	MMW	HAVE PROP	ARMY	Ĭ	NEW JERSEY	6/74- 7/79	3271
C75-17	HEALTH ED TV	EDUCATION	ASSOC OF W HOSP	CTS	ROCKY HTNS	PENDING	0
CTS-17	HEALTH ED TV	MEDICAL	ASSOC OF W HOSP	CTS	ROCKY HTNS	PENDING	ö
319	SIRIUS	RANGING	BAKER DEV CORP	3	BERHUDA	12/76= 1/77	40
335	VHF SAR SIM	RANGING	BAKER DEV CORP	3	BERMUDA	6/77- 9/77	15
319	SIRĪUS	SUPPORT .	BAKER DEV CORP	3	BERHUDA	12/76= 1/77	40
607	HWA	MAVE PROP	BATTELLE LAB	3		6/74- 7/79	. —
609		HAVE PROP			WASHINGTON New Jersey	6/79- 7/79	3271
251	MMW	DATA TRANS	BELL LAB Boeing	5			3271
251	L-BAND DOT	RANSING	BOEING	3	N. AMERICA	4/74-10/76	128
251 252	L-BAND DOT L-BAND FTA			7	N. AMERICA	2/71- 7/74	557
664	SAR L-BAND C/O	RANGING RANGING	BOEING Boeing	7	N. AMERICA	4/71- 4/72	275
260	CRC C/L-BAND		CANADA	•	N. ATLANTIC	8/79- 9/75	13
		MAVE PROP		7		√/71- 5/72	113
657	CRC	RANGING	CANADA/CRC	÷	CANADA	9/74- 8/77	138
257	SHF CRC	MAVE PROP	CANADA/CRC	1	CANADA	1/71-12/71	76
CTS-04	COLLEGE CURR	EDUCATION	CARLETON UNIV	CTS	U.S./CANADA	2/76- OPEN	446
CTS-24	DICE	DATA TRANS	COMSAT LABS	CTS	U-S-(EAST)	5/76- OPEN	131
CTS-06	TET/COMSAT	GRD TERM	CONSAT LABS	CTS	U.S. (EAST)	2/76- OPEN	266
259	CONSAT C/L PROP	HAVE PROP	COMSAT LABS	5	W. HEMIS.	1/72- 4/72	37
638	COMSAT PROP IND	WAVE PROP .	CONSAT LABS	•	EUROPE	3/76- 7/76	667
658	COMSAT PROP US	MAVE PROP	COMSAT LABS	6	U.S.(EAST)	6/79- 6/78	159
609	MMV	HAVE PROP	COMSAT LABS	9	VIRGINIA	6/74- 7/79	3271
289	VHF CALYPSO	DATA TRANS	COUSTEAU GROUP	Ž ,	ANTARCTICA	6/72- 1/76	358
289	VHF CALYPSO	SUPPORT	COUSTEAU GROUP	3	ANTARCTICA	6/72- 1/76	358
336	DISP	CONFERENCE	DEPT OF INTER	Ī	PACIFIC	12/77- OPEN	1453
357	FLTAC	CONFERENCE	DEPT OF NAVY	3	W. HEHIS.	1/77- OPEN	391
663	U. OF W. INDIES	BROADCAST	DEPT OF ST/AID	6	WEST INDIES	10/76- 7/79	66
222	U. OF W. INDIES	EDUCATION	DEPT OF ST/AID	3	JAMAICA	1/78- 6/78	223
663	U. OF W. INDIES	EDUCATION	DEPT OF ST/AID	6	WEST INDIES	10/78- 7/79	66
344	BARBADOS	HEDICAL	DEPT OF ST/AID	3	BARBADOS	8/78- 9/7E	1.9
318	DRI	DATA TRANS	DESERT RES INST	1	ANTARCTICA	12/76- 1/77	10
318	DRI	DATA TRANS	DESERT RES INST	3	ANTARCTICA	12/76- 1/77	627
318	DRI	HETEOR.	DESERT RES INST	1	ANTARCTICA	12/76- 1/77	10
219	DRI	HÉTEOR	DESERT RES INST	3	ANTARCTICA	12/76- 1/77	627
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[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

3.4 Sorted by Experimenter (cont.)

10.	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS .
310	VHF DEA	CONFERENCE	DRUS ENF AGY	3	U.S.	4/76- OPEN	131
310	AME DEV	RANGING	DRUG ENF AGY	3	U.S.	4/76- OPEN	131
102	DATA XPISSION	MEDICAL	DUKE U. MED CEN	1	U.S. (EAST)	11/71-11/71	54
281	LOS ALAMOS	A/C COMM	EGAS	1	W. HEMIS.	10/70-10/71	265
232	VHF EGEG	A/C COMM	EGE6	1	W. HEMIS.	6/68-10/72	46
232	VHF EGEG	SUPPORT	ESCS	1	W. HEMIS.	6/68-10/72	
315	ERDA	DATA TRANS	ERDA	1	PACIFIC	1/78- 1/79	146
315	ERDA ,	DATA TRANS	ERDA	3	PACIFIC	7/76- 8/76	5
315	ERDA	SUPPORT	ERDA	1	PACIFIC	1/70- 1/79	146
315	ERDA	SUPPORT	ERDA	3	PACIFIC	7/76- 8/76	5
336 5. 1	ERDA/DOD	SUPPORT	ERDA	1	ENEWETAK	10/77- 9/78	49
242	PROPAGATION(E)	WAVE PROP	ESTEG FAA	•	EUROPE N. AMERICA	8/75-10/76 4/71- 4/72	2263
664	SAR L-BAND C/O	RANGING	FAA	4	N. ATLANTIC	8/79- 9/75	275 13
CTS-30	TER OF TOMORROW	GRD TERM	FCC	CTS	U-S.	3/78-12/78	56
CT5-25	CONGRESS	CONFERENCE	GEO WASH UNIV	CTS	MARYLAND	4/77- 4/74	39
310	VHF DEA	CONFERENCE	6E	3	U.S.	4/76- OPEN	131
288	SE/MARAD	DATA TRANS	GE	ī	ATLANTIC	4/72- 5/72	7
284	SE/MARAD	DATA TRANS	GΕ	3	ATLANTIC	4/72- 5/72	46
224	VHF BE	DATA TRANS	SE.	i	BERHUNA	2/69- 8/71	41
228	VHF GE	DATA TRANS	38	3	BERHUDA	2/69- 8/71	192
288	GE/HARAD	MARITIME	SE TOTAL	1	ATLANTIC	4/72- 5/72	7
286	GE/HARAD	MARITIME	SE	3	ATLANTIC	4/72- 3/72	46
228	VHF BE	MARITIME	GE.	1	BERHUDA	2/69- 8/71	41
228	VHF BE	HARITIME	65	3	BERMUDA	2/69- 8/71	142
261	GE L-BAND	ranging	6E	1	N. AMERICA	6/70-10/72	á
261	GE L-BAND	ranging	. 33	3	N. AMERICA	6/70-10/72	51
261	GE L-BAND	RANGING	6E	5 .	N. AMERICA	6/70- 6/73	152
674	GE L-BAND	RANGING	SE '.	•	U-S-(EAST)	12/77- 7/79	573
234	GE/FAA	RANGING	SE .	ī	N. ATLANTIC	11/69- 6/71	
234 288	GE/FAA	RANGING	GE GE	3	N. ATLANTIC	11/69- 6/71	99.
268	GE/MARAD GE/MARAD	RANGING RANGING	66	3	ATLANTIC ATLANTIC	4/72- 5/72 4/72- 5/72	7
266	L-BAND TRILAT	RANGING	8E	i	U-S-	1/79- 1/76	19
268	L-BAND TRILAT	RANGING	SE	ŝ	U-S-	1/70- 1/76	78
268	L-BAND TRILAT	RANGING	33	į	U.S.	1/74- 1/76	172
310	VHF BEA	RANGING	6E	3	U.S.	4/76- OPEN	131
228	VHF GE	RANGING	GE	ī	BERHUDA	2/69- 6/71	41
228	VHF GE	RANGING	GE	3	BERHUDA	2/69- 8/71	142
674	GE L-BAND	SUPPORT	6E	Ď	U.S.(EAST)	12/77- 7/79	573
107	SPEC SHF	SUPPORT	GE	1	W. HEMIS.	68- 70	1929
107	SPECSHF	SUPPORT	GE	3	W. MEMIS.	68- 70	1613
293	SE/EXXON'	DATA TRANS	GE & EXXON	1	ATLANTIC	7/73- 2/74	90
293	GE/EXXON	DATA TRANS	GE & EXXON	3	ATLANTIC	7/73- 2/74	156
293	GE/EXXON	MARITIME	GE & EXXON	ī	ATLANTIC	7/73- 2/74	70
293	GE/EXXON	MARITIME	SE C EXXON	3	ATLANTIC	7/73- 2/79	186
293	GE/EXXON	RANGING	SE & EXXON	1	ATLANTIC	7/73- 2/74	90
293	GE/EXXON	RANGING	GE E EXXON GTE LABS	3	ATLANTIC	7/73- 2/74	186
	WIDE BAND COMM.	CONFERENCE		CTS	U.S.	1/79- OPEN	6
294 294	SP HET	SUPPORT	HET HET	3	U.S. U.S.	1/73- 8/77 1/73- 8/77	1654
30C	VHF IHCHIS	MEDICAL	IHCHIS	1	ALASKA	5/79- 5/74	1918
677	INS	COMPUTER	INDIAN HLTH SER	:	ALASKA	9/78- 7/79	2 .
677	IHS	CONFERENCE	INDIAN HLTH SER	6	ALASKA	9/78- 7/79	0.
612	HET (ARC)	MEDICAL	INDIAN HLTH SER	Ĭ	ALASKA	6/74- 6/75	1741
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[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

ID	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS	٠
677	INS	HEDICAL	INDIAN HLTH SER	•	ALASHA.	9/78= 7/79	ō	
647	SITE	BROADCAST	INDIA	•	INDTA	#/75- #/76	2171	
647	SITE	EDUCATION	INDÍA	6	INOTA	4/75- 4/74	2171	
317	LAMONT	SUPPORT	LAMONT/DOHERTY	3	SO. OCEAN	10/76- 3/77	161	
282	VMF NLM	COMPUTER	LISTER HILL	1	U-S-(N-W-)	10/71- OPEN	61.9	
CTS-07	BIONED COMMUN	EDUCATION	LISTER HILL	CTS	U.S.	6/77- OPEN	404	
CT1-07	BIONED CONNUN	MEDICAL	LISTER HILL	CTS	U.S.	4/77- OPEN	404	
242	VHF NLH	MEDICAL	LISTER HILL	1	U-S-(N-H-)	10/71- OPEN	419	
249 :	HARAD	DATA TRANS	MARAD	5	W. MEMIS.	3/70-12/71	45	
249	HARAD	MARITIME	MARAD	5	W. HEHTS.	3/70-12/71	65	
230	ANE SAION	SUPPORT	MAX PLANCK INST	3	W. HEMIS.	3/71- 9/71	176	
670	TEAN	EDUCATION	HONTANA ST U	•	MONTANA	9/77- 7/79	2	
292	VHF CLIPPER	SUPPORT	HOODY COLLEGE	1	ATLANTIC	7/73- 6/77	4	
292	VHF CLIPPER	SUPPORT	HOODY COLLEGE	3	ATLANTIC	6/73- 6/77	342	
666	MOTOROLA	WAVE PROP	MOTOROLA	•	U.S.	7/77- 9/76	47	
231	VMF HSFN PROP	MAVE PROP	MSFN METWORK	•	W. HENIS.	9/70- 2/71 3/75- 5/75	22	
671	MSH	MEDICAL	MTN STS HTH COR	7	ROCKY HTHS		22 967	
605	PLACE	DATA TRANS	NASA	7	U.S.	9/74- 6/75 6/74- 7/79	322	
639	ALL DEMO	DEMO	NASA	7	U.S.	9/74- 6/75	967	
605	PLACE	RANGING	MASA Nasa	•	U.S.	1/67= 1/76	130	
104	LAUNCH SUPPORT	SUPPORT	NASA	Ś	U.S.	1/67- 8/76	367	
108	LAUNCH SUPPORT	SUPPORT	NA SA	í	U.S.	3/67-10/72	67	
108	LAUNCH SUPPORT	SUPPORT	NASA	i .	2.0	7/77- 2/78	Ť	
202	S/C SUPPORT	SUPPORT	NASA	i	W. HEMIS.	4/69- 70	270	
CTS-18	INTRANASA COMM	CONFERENCE	NASA/ARC	CTS	U.S.	5/76- OPEN	302	
CT5-18	INTRANASA COMM	CONFERENCE	NASA/GSFC	CTS	U.S.	5/76- OPEN	382	
620	GEOS-C	DATA TRANS	NASA/GSFC		HORLD	9/74- 7/79	474	
617	TORE	DATA TRANS	NASA/GSFC	•	WORLD	9/79- 7/79	622	
618	TRUST	DATA TRANS	NASA/GSFC	•	U.S.	9/79- 7/75	40	
311	SSFC	DENO	NASA/GSFC	3	U.S.(EAST)	7/76- OPEN	1705	
CTS-20	ADV GRD REC EQ	GRD TERM	NA SA / GSFC	CTS	U-S-	4/76- 4/78	7	
602	WHRR RADIOMETER	METEOR.	NASA/GSFC	•	u.s.	6/74- 9/74	360	
620	SEOS-C	SAT CONTRL	NASA/65FC	•	HORLD	9/79- 7/79	874	
607	INDRAS	SAT CONTRL	NASA/6SFC	•	U-S.	6/74- 7/75	5	
610	INTERFEROMETER	SAT CONTRL	HASA/6SFC	•	U.S.	6/74-11/78	104	
604	SAPPSAC	SAT CONTRL	NASA/GSFC	•	U.S.	6/74- 1/75	72	
617	TORE	SAT CONTRL	NASA/GSFC	•	WORLD	9/79- 7/79	622	
631	ENV HEAS EXP	SCIENTIFIC	NASA/6SFC	•	U.S.	6/74- 7/77	50	
649	MAG FIELD STUDY	SCIENTIFIC	MASA/GSFC	-	U.S.	4/75- 6/75	295	
CTS-01	COMM LINK CHAR	WAVE PROP	NASA/GSFC	CTS	U.S.	2/76-12/77 8/69- 9/71	315	
244	HMW REG 1	WAVE PROP	NASA/GSFC	3	N. AMERICA		1466	
245	MMW REG 2	WAVE PROP	NASA/GSFC NASA/GSFC	3	N. AMERICA U.S.	8/69- 9/71 6/79- 7/79	3271	
609	MMU GADIO EDEO THE	MAVE PROP	NASA/6SFC	I	U.S.	6/74-12/76	877	
601 603	RADIO FREG INT.	MAVE PROP	NASA/ESFC	1	MORLD	6/79- 6/75	• •	
640	APOLLO-SOYUZ	SUPPORT	NASA/HOUSTON		WORLD	10/74- 7/75	333	
CTS-18	INTRANASA COMM	CONFERENCE	NASA/LERC	CTS		5/76- OPEN	382	
CTS-24	DICE	DATA TRANS	NA SA/LERC	CTS	U.S. (EAST)	6/77- OPEN	131	
CTS-22		DATA TRANS	NASA/LERC	CTS	ALASKA	8/76- 9/76	70	
CTS-T	TEP/SHF	GRO TERM	NASA/LERC	CTS	OHIO	2/76- OPEN	839	
230	VHF B/ION	SUPPORT	NASA/WALLOPS	3	U. HEMIS.	3/71- 9/71	176	
234	VHF NBS	TIME/FREG	NAT BUR OF STDS	3	W. HEMIS.	8/71- 8/72	327	
227	HET ALASKA	EDUCATION	NAT EDUC ASSOC	1	W. HEMIS.	6/69- OPEN	11314	
302	NEA	EDUCATION	NAT EDUC ASSOC	1	APPAL/ALASK	1/76- 4/77	39	

⁻ ATT SCHEDULED TIME/CTS ACTUAL TIME

IDa	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS .
302	NEA	EDUCATION	NAT EDUC ASSOC	3	APPAL/ALASK	1/76- 4/77	76
314	NSTL	MEDICAL	NAT SP TECH LAG	3	U.S. (SOUTH)	10/76-10/76	71
CTS-27	MOMENS SAT SER	CONFERENCE	NAT WOMENS AG	CTS	U.S.	PENDINE	G
343	ORANGE	SUPPORT	NAT. SC. FOUND.	3	ANTARCTICA	7/70- 6/78	176
666	UHF/NAL	SCIENTIFIC	NAVAL RES LAB	6	U.S.	9/77- 5/78	18
609	MMW	MAYE PROP	NAVAL RES LAB	6 .	MARYLAND	6/74- 7/79	3271
226	VHF NETHERLAND	MARITIME	NETHERLANDS	3	ATLANTIC	8/70-12/71	265
295	VHF NIAID	MEDICAL	NIAID	i	PACIFIC	10/73- OPEN	237
210	NSSCC	DATA TRANS	NOAA	ì	WORLD	3/69- 6/72	7
210	MSSCC	DATA TRANS	NOAA	3	WORLD	3/69- OPEN	26966
205	SSCC	DATA TRANS	NGAA:	1	WORLD	3/69- OPEN	8372
205	SSCC	DATA TRANS	ROAA	3	MORLD	3/69- OPEN	20
183	MEFAX	DATA TRANS	NOAA	1	MORLD	3/69- OPEN	5957
183	WEFAX '	DATA TRANS	NOAA	3	WORLD	3/49- OPEN	3943
211	IDCS	HETEOR.	NOAA	3	U.S.	11/67-10/72	1050
210	MSSCC	HETEOR.	NOAA	1	MORLD	3/69- 6/72	7
210	MSSCC	HETEOR.	NOAA	3	MORLD	3/69- OPEN	26966
205	SSCC	HETEOR.	NOAA	1	MORLD	3/69- OPEN	8372
205	SSCC	HETEOR.	NOAA	3	WORLD	3/69- QPEN	20
183	VEFAX	HETEOR.	NOAA	1	HORLD	3/69- OPEN	5757
183	MEFAX	HETEOR.	NOAA	3	WORLD	3/67- OPEN	3993
211	IDES	SAT PHOTOS	NOAA	3	U.S.	11/67-10/72	1050
301	VHF BATE	SUPPORT	NOAA	3	UNKNOWN	1/74- 9/74	300
606	RADIO BEACON	HAVE PROP	NOAA	Ĭ	U-S.	6/79- 7/79	Ö
606	RADIO BEACON	WAVE PROP	NOAA	Ă	EUROPE	6/74- 7/79	ă
533	VHF NORWAY	HETEOR.	HORMAY	3	N. ATLANTIC	11/70- 2/71	22
233	YHE NORWAY	RANGING	NORWAY	ž	N. ATLANTIC	11/70- 2/71	22
CTS-01	COMM LINK CHAR	WAVE PROP	OHIO STATE U	ČŤŠ	OHIO	2/76=12/77	315
607	MMU	WAVE PROP	OHIO STATE U.		OHIO	6/79- 7/79	3271
235	VHF HAVAII	EDUCATION	PEACESAT	ĭ	PACTFIC	2/72- OPEN	6942
235	VHF HAVATI	MEDICAL	PEACESAT	ĭ	PACIFIC	2/72- OPEN	6742
331	PLU	BROADCAST	PROJECT LOOK-UP	3	PUERTO RICO	1/76- OPEN	87
660	PLU	BROADCAST	PROJECT LOOK-UP	Ā	SO.AHERICA	1/76- 7/79	141
331	PLU	EDUCATION	PROJECT LOOK-UP	š	PUERTO RICO	1/76- OPEN	07
660	PLU	EDUCATION	PROJECT LOOK-UP	4	SO. AMERICA	1/76- 7/79	191
661	ALFE	BROADCAST	PSSC	Ă	ALASKA	9/77-10/78	1979
672	SAMFE	BROADCAST	PSSC	6	SAMOA	9/77- 2/78	444
340	SAMOA TV SAMPE	BROADCAST	PSSC	ĭ	SAMOA	9/77- OPEN	53
340	SANDA TV SAMFE	BROADCAST	PSSC	3	SAMOA	9/77- OPEN	96
661	ALFE	DATA TRANS	PSSC	ă	ALASKA	9/77-10/78	1979
CTS-21	PSSC	DENO	PSSC	CTS	U.S.	2/77- OPEN	204
667	ALVA	EDUCATION	PSSC	6	ALASKA	9/77- 7/79	69
667	ALVA	EDUCATION	PSSC		U.S. (VEST)	9/77- 7/79	69
667	ALVA	MEDICAL	PSSC	6	ALASKA	9/77- 7/79	69
667	ALVA	MEDICAL	PSSC	4	U.S. (NEST)	9/77- 7/79	69
CTS-21	PSSC	SUPPORT	PSSC	CTS	U.S.	2/77- OPEN	284
258	SHF SEARCH	LAW ENFORC	PUBLIC SYST INC	1	U-S.	12/71-12/71	68
253	SHF VLBI	TIME/FREQ	RADIO RES LABS	i	JAPAN	1/77- 2/77	- 5
253	SHF VLBI	TIME/FREQ	RADIO RES LABS	3	JAPAN	1/77- 2/77	190
304	VHF OPN	TIME/FREG	RADIO RES LABS	ī	JAPAN	67- OPEN	158
612	HET (ARC)	EDUCATION	ROCKY HTH STS	į	ROCKY HTNS	6/74- 6/75	1741
CTS-09	SALINET	EDUCATION	SALINET	CTS	U.S.	10/77- 4/78	10
284	VHF HIGH NOTE	RANGING	SANDIA/AEC	1	U.S.	3/71- 6/72	. 5
284	VHF HISH NOTE	RANGING	SANDIA/AEC	3	U.S.	3/71- 6/72	5
CTS-26	PROJ ADJUNCT	CONFERENCE	SAT BUS SYSTEMS	CTS	VIRGINIA	9/77- 2/78	178

[.] ATS SCHEOULED TIME/CTS ACTUAL TIME

10.	EXP. NAME	CAT.	EXPERIMENTED	SAT	LOCATION	CHRONOLOGY	HR\$	•
CTS-26	PROJ ADJUNCT	DATA TRANS	SAT BUS SYSTEMS	CTS	YEPEINIA	9/77= 2/74	170	
CTS-19	SAT. DIST.	DATA TRANS	SECA	CTS	U.S. (SOUTH)	12/76- OPEH	655	
207	VHF SEEK	METEOR.	SIERRA RES CORP	3	U.S.	1/72-12/72	•	
253	SHF VLBI	TIME/FREQ	SMITHSONIAN INS	1	U.S.	5/71-10/72	2	
253	SHF VLBI	TIME ! FREG	SMITHSONIAN INS	3	U.S.	5/71-10/72	1.90	
253	SHF VLBI	TIME/FREQ	SHITHSONIAN INS	5	U.S.	5/71-10/72	C	
316	NSTL	MEDICAL	SO REG MED CONS	3	U.S. (SOUTH)	10/76-10/76	71	
CTS-04	COLLEGE GURR	EDUCATION	STANFORD UNIV	CTS	U-5-/GANADA	2/76- OPEN	446	
236	VHF BRAZIL	EDUCATION	STANFORD UNIV	3	W. HEMIS.	2/70- OPEN	38	
285	VMF STANFORD	EDUCATION	STANFORD UNIV	1	U.S. (MEST)	5/71- 6/72	2	
265	VHF STANFORD	EDUCATION	STANFORU UNIV	3	U.S. (WEST)	5/71- 6/72	139	
324	SIPLE	SUPPORT	STAMFORD UNIV	3	W. HEMIS.	2/77- OPEN	1166	
227	HET ALASKA	EDUCATION	ST. OF ALASKA	1	ALASKA	6/69- OPEN	11314	
612	MET (ARC)	EDUCATION	ST. OF ALASKA	6	ALASKA	6/74- 6/75	1741	
227	HET ALASKA	MEDICAL,	ST. OF ALASKA	1	ALASKA	6/69- OPEN	11314	
330	HONTANA	SUPPORT	ST. OF MONTANA	3	MONTANA	6/77-11/77	163	
503	TELESAT	HAVE PROP	TELESAT CANADA	1	CANADA .	9/72- 9/72	136	
325	GYRE	SUPPORT	TEXAS AGH	3	w. Henzs.	4/77-10/78	315	
309	NSF	SUPPORT	TEXAS AGN	3	ATLANTIC	3/16- 9/76	161	
292	VHF CLIPPER	SUPPORT	TEXAS AGH	3	ATLANTIC	6/73- 6/77	342	
30.4	VHF DRAKE	SUPPORT	TEXAS AGN	3	ANTARCTICA	1/75- OPEN	420	
283	VHF UCLA	EDUCATION	TRU	3	U.S.(VEST)	9/71-10/71	1.5	
283	VHF UCLA	EDUCATION	UCLA	3	U.S. (NEST)	9/71-10/71	15	
6 5 0	HAG DATA	SCIENTIFIC	UCLA	6	U.S.	5/75- 8/76	907	
225	VHF ENGLAND	MARITIME	UNITED KINDSOM	2	ATLANTIC	8/70-12/70	191	
CTS-ZB	VLDI	TERRYTHEO	UNIV OF ILL	CTS	U.S./CANADA	5/78-12/76	120	
247	ALPHA-2	RABOING	USAF/SAMSO	5	ATLANTIC	7/70- 2/71		
239	VHF VANGUARD	Canperence	USCE	1	atlantic	6/48- 7/69	12	
239	VHF VANGUARD	CONFERENCE	USCS	3	ATLANTIC	6/68-10/74	24	
265	VANGUARD	DATA TRANS	usce	3	ATLANTIC	3/72- 4/73	78	
265	VANGUARD	DATA TITANS	USC6	3	PACIFIC	3/72- 4/73	78	
239	VHF VANGUARD	DATA TRANS	USCE	1	ATLANTIC	6/68- 7/69	12	
237	VHF VANGUARD	DATA TRANS	USCS	. 3	ATLANTIC	6/68-10/74	2.6	
265	VANGUARD	ranging	USCS	5	ATLANTIC	3/72- 4/73	232	
265	VANGUARD .	RANGING	USCE	5	PACIFIC	3/72- 4/73	525	
290	VHF BERING SEA	SUPPORT	US/USSR	1	BERING SEA	12/72- 3/73	. 43	
CTS-13	DECENT HED ED .	EDUCATION	U OF WASHINGTON	CTS	ALASKAZWASH	3/77- OPEN	292	
CTS-31	3 MAY TIME TRAN	TIME/FREQ	U.S. NAVAL OBS.	CTS	U-S-/CANADA	1/79- 7/79	0	
329	NORPAX	SUPPORT	U. OF CAL/HAVY	1	N. PACIFIC	5/77- 6/77	53	
CTS-35	CT SCANNING NET	MEDICAL	U. OF COLORADO	CTS	U.S. (WEST)	~ 4/79- 7/79	0	
305	WHF ALOHA	COMPUTER	U. OF HAVAIN	Ţ.	PACIFIC	72- OPEN	1167	
307	VMF OCEAN	SUPPORT	u. OF MIAMI	3	ATLANTIC	12/77 - OPEN	2241	
623	L-BAND EXP	WAVE PROP	U. OF PA	6	U.S. (EAST)	8/76- 1/77	787	
332	ENDEAVOR	SUPPORT	U. OF RHODE ISL	3	ATLANTIC	7/77- 1/78	168	
CTS-01	COMM LINK CHAR	WAVE PROP	U. OF TEXAS	CTS	TEXAS	2/76-12/77	315	
609	MMP	WAVE PROP	U. OF TEXAS	6	TEXAS	6/74- 7/79	3271	
320	SAMOA	EDUCATION	U. SO. PACEFIC	1	SAMOA	1/77- OPEN	258	
297	VHF USP/FIJI	EDUCATION EDUCATION	U. SO. PACIFIC	1	PACIFIC	1/74- OPEN	2667	
CTS-29 CTS-11	UNIV GRAD STUDY HEALTH/COMMUN	EDUCATION	VARIAN ASSOC VETERANS ADM	CTS	U.S. U.S.(MEST)	5/78-12/78	49	
	HET (ARC)	EDUCATION	VETERANS ADM	4	APPALACHIA	6/77 - OPEN	306	
612 CTS-11	HEALTH/COMMUN	MEDICAL	VETERANS ADM	CTS	U.S.(WEST)	6/74- 6/75	1791 306	
612	HET (ARC)	MEDICAL	VETERANS ADM	6	APPALACHIA	6/77- OPEN 6/74- 6/75	1741	
CTS-01	COMM LINK CHAR	WAVE PROP	VIRGINIA POLY	CTS	VIRGINIA	2/76-12/77	315	
609	MMM CIME CHAN	HAVE PROP	VIRGINIA POLY	6	VIRGINIA	6/74-1/79	3271	
TU 7	ा ह्4 क	WATE PROP	ATEMPATE SAFE	•	* ******	#//T- ///Y	3471	

[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

104	EXP. NAME	CAT	EXPERIHENTEP	SAT	LOCATION	CHRONOLOGY	HRS '-
CT5-13	DECENT AND ED	EDUCATION	VANT	CTS	ALASKA/VASH	3/77 - OPEN	292
612	HET LARCE	EDUCATION	VANÍ	6	ALASKA/VASH	6/74- 6/75	1741
CTS-13	DECENT HED ED	HEDICAL	UANT	CTE	ALASKA/WASH	3/77- OPEN	292
612	HET (ARC)	HEDICAL	VANI	6	ALASKA/VASH	6/74- 6/75	1741
CTS-15	TELECONFERENCE	CONFERENCE	HESTINGHOUSE	CTS	U.S. (EAST)	2/76- OPEN	286
250	L-BAND RANGING	RANGING	WESTINGHOUSE.	1	U.S. (MEST)	2/71- 5/71	•
250	L-BAND RANSING	RANGING	VESTINGHOUSE	Š	U.S. (MEST)	2/71- 5/71	Ö
256	L-BAND RANGING	RANGING	WESTINGHOUSE	5	U.S. (WEST)	2/71- 5/71	••
246	SSRA	RANGING	SENDMONSE	\$	U-S-(WEST)	4/71- 5/71	i
607	MMU	HAVE PROP	RESTINGHOUSE	Ď	HARYLAND	6/74- 7/79	3271
322	HHOT	SUPPORT	HOUDS HOLE THEY	3	PACIFIC	1/77- 2/77	244

[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

3.5 Sorted by Satellite

100	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS .
CYS-12	AESP II	EDUCATION	APP. REG. COMM.	CTS	APPALACHIA	PENDING	C
CT5-16	PROJ INTERCHE	EQUEATION	ARCH OF S.F.	CTS	CALIFORNIA	3/76= 6/78	45
CT\$-17	HEALTH ED TY	EDUCATION	ASSOC OF W HOSP	CTS	ROCKY HTNS	PENDING	Ö
CT5-17	HEALTH ED TV	HEDICAL	ASSOC OF W HOSP	CTS	ROCKY HTNS	PENDING	Õ
CTS-04	COLLEGE CURR	EDUCATION	CARLETON UNIV	CTS	U.S./CANADA	2/76- OPEN	446
CT5-24	DICE	DATA TRANS	COMSAT LABS	CTS	U.S. (EAST)	5/76- OPEN	131
CTS-06	TET/COMSAT	GRD TERM	COMSAT LABS	CTS	U.S. (EAST)	2/76- OPEN	266
CTS-JO	TER OF TOMORROW	GRO TERM	FCC	CTS	U.S.	3/70-12/78	56
CTS-25	CONGRESS	CONFERENCE	SEO WASH UNIV	CTS	MARYLAND	4/77- 4/78	39
CTS-33	WIDE BAND COMM.	CONFERENCE	STE LABS	CTS	U.S. '	1/79- OPEN	6
CTS-07	BIONED COMMUN	EDUCATION	LISTER HILL	CTS	U.S.	6/77- OPEN	404
CTS-07	BIONED CONMUN	MEDICAL	LISTER HILL	CTS	U.S.	6/77- OPEN	404
CTS-18	INTRANASA COPH	CONFERENCE	NASA/ARC	CTS	U.S.	5/76- OPEN	382
CT5-10	INTRANASA COMM	CONFERENCE	NASA/GSFC	CTS	U-S-	5/76- OPEN	302
CTS-20	ADV SHO REC EQ	GRO TERM	NASA/ESFC	CTS	0.5.	4/76- 4/78	87
CTS-01	COMM LINK CHAR	HAVE PROP	NASA/GSFC	CTS	U+S"	2/76-12/77	315
CTS-18	INTRANASA COMM	CONFERENCE	NA SA /LERC	CTS	U.S.	5/76- OPEN	302
CTS-24	DICE	DATA TRANS	NASA/LERC	CTS	U.S. (EAST)	6/77- OPEN	131
CTS-22	ICE FLOW	DATA TRANS	NASA/LERC	CTS	ALASKA	8/75 9/76	70
CTS-T CTS-27	TEP/SHF WOMENS SAT SER	GRO TERM Conference	NASA/LERC	CTS	OHIO	2/76- OPEN	839
CTS-01	COMM LINK CHAR	MAVE PROP	NAT WOMENS AS ONIO STATE U	CTS	U+\$+ OHIO	PENDING 2/76-12/77	0 315
CTS-21	PSSC	DENG	PSSC	CTS	U.S.	2/77 - OPEN	284
CTS-21	PSSC	SUPPORT	P53C	CTS	U.S.	2/77- OPEN	284
CTS-09	SALINET	EDUCATION	SELINET	CTS	U.S.	10/77- 4/78	10
CTS-26	PROJ ADJUNCT	CONFERENCE	SAT BUS SYSTEMS	GTS	VIRGINIA	9/77- 2/78	178
CTS-26	PROJ ADJUNCT	DATA TRANS	SAT BUS SYSTEMS	ČŤS	VIRGINIA	9/77- 2/78	178
CTS-19	SAT. DIST.	DATA TRANS	SECA	CTS	U.S. (30UTH)	12/76- OPEN	655
CT5-04	COLLEGE CURR	EDUCATION	STANFORD UNIV	CTS		2/74- OPEN	996
CTS-28	YLBI	TIME/FREG	UNIV OF ILL .		U.S./CANADA	5/78-12/78	120
CTS-13	DECENT MED ED	EDUCA TION	U OF WASHINGTON	CTS	ALASKA/WASH	3/77- OPEN	292
CTS-31	3 WAY TIME TRAN	TIME/FRE Q	U.S. NAVAL OBS.	CTS	U-S-/CANADA	1/79- 7/79	٥
CTS-35	CT SCANNING NET	HEDICAL	U. OF COLORADO	CTS	U.S. (WEST)	4/79- 7/79	0
CTS-01	COMM LINK CHAR	MAVE PROP	U. OF TEXAS	CTS	TEXAS	2/74-12/77	315
CTS-29	UNIV GRAD STUDY	EDUCATION	VARIAN ASSOC	CTS	U•Š•	5/78-12/70	49
CTS-11	HEALTH/COMMUN	EDUCATION	VETERANS ADM	CTS	U.S.(WEST)	6/77- OPEN	306
CT\$-11	HEALTH/COMMUN	MEDICAL	VETERANS ADM	CTS	U-So(WEST)	6/77- OPEN	206
CTS-01	COMM LINK CHAR	HAVE PROP	VIRGINIA POLY	CTS	VIRGINIA	2/76-12/77	315
CTS-13	DECENT HED ED	EDUCATION	VAMI	CTS	ALASKA/WASH	3/77- OPEN	292
CTS-13	DECENT MED ED	HEDICAL	WAMI	CTS	ALASKA/WASH	3/77- OPEN	292
CTS-15	TELECONFERENCE	CONFERENCE	WESTINGHOUSE	CTS	U.S. (EAST)	2/76- OPEN	286
291	VHF ZURITA	SUPPORT	AEC	1	ALASKA/HAW.	6/73-12/73	62
312	ALC	CONFERENCE	AMER LUTHERAN C	1	u.s.	6/76- OPEN	219
105	VHF A/C	AZC COMM	ARINC	1	U.S.	1/67- 6/70	264
257	SHF CRC	UAVE PROP Conference	CAMADA/CRC DEPT OF INTER	1	CANADA Pacific	1/71-12/71	76 . 1453
338	DISP	DATA TRANS	DESERT RES INST	1	ANTARCTICA	12/77- OPEN 12/76- 1/77	
314	DRI DRI		DESERT RES INST	1	ANTARCTICA		រព
318 102	DATA XMISSION	METEOR. Médical	DUKE U. MED CEN	Ž.	U.S. (EAST)	12/76- 1/77 11/71-11/71	10 54
281	LOS ALAMOS	A/C COMM	ESEG	î	W. HEMIS.	10/70-10/71	265
232	VHF EGEG	A/C CONF	£646	i	W. HENIS.	6/68-10/72	48
232	% EGGG	SUPPORT	EGEG	i	W. HERIS.	6/68-10/72	48
315	ERDA	DATA TRANS	ERDA	ī	PACIFIC	1/78- 1/79	146
315	ERUA	SUPPORT	ERDA	5	PACIFIC	1/78- 1/79	146
336	ERDA/DOÙ	SUPPORT	ERDA	í	ENEVETAK	10/77- 9/78	49

⁻ ATS SCHEDULED TIME/CTS ACTUAL TIME

ID#	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS .
288	SE/HARAD	DATA TRANS	GE .	1	ATLANTIC	4/72- 5/72	7
226	VHF GE	DATA TRANS	GE	1	BERMUDA	2/67- 8/71	41
286	6E/MARAD	MARITIME	GE	1	ATLANTIC	4/72- 5/72	7
228	VHF GE	MARITIME	GE.	1	BERHUDA	2/69- 8/71	41
261	GE L-BAND	RANGING	62	1	N. AMERICA	6/70-10/72	1 .
234	GE/FAA	RANGING	6E	1	N. ATLANTIC	11/69- 6/71	4
284	6E/HARAD	RANGING	6E	1	ATLANTIC	4/72- 5/72	7
265	L-BAND TRILAT	RANGING	ĠΕ ,	. 1	U.S.	1/74- 1/76	19
228	VHF GE	ranging	6E	1	BERHUDA	2/69- 8/71	41
107	SPEC SHF	SUPPORT	38	1	w. Henis.	68- 7C	1929
293	GE/EXXON	DATA TRANS	SE & EXXON	1	ATLANTIC	7/73- 2/74	90
293	6E/EXXON	MARITIME	GE C EXXON	1	ATLANTIC	7/73- 2/74	9 0
293	GE/EXXON	ranging	GE C EXXON	1	ATLANTIC	7/73- 2/74	90
294	SP HET	SUPPORT	HET	1	U.S.	1/73- 8/77	1654
300	VHF IHCHIS	MEDICAL	IHCHIS	1	ALASKA	5/74- 5/74	
282	VHF NLH	COMPUTER	LISTER HILL	1	U-S-(N-W-)	10/71 OPEN	619
545	VHF NLH	MEDICAL	LISTER HILL	1	U.S.(N.U.)	10/71- OPEN	619
242	VHF CLIPPER	SUPPORT	HOODY COLLEGE	1	ATLANTIC	7/73- 8/77	4
108	LAUNCH SUPPORT	SUPPORT	HASA	1	U.S.	1/67- 1/76	930
202	S/C SUPPORT	SUPPORT	NASA	1	W. HEMIS.	4/69- 70	270
227	HET ALASKA	EDUCATION	NAT EDUC ASSOC	1	W. HEMIS.	6/69- OPEN	11314
302	NEA	ZDUCATION	NAT EDUC ASSOC	1	APPAL/ALASK	1/76- 4/77	39
275	VHF NIAID	MEDICAL	NIAZD	1	PACIFIC	10/73- OPEN	237
210	MSSCC	DATA TRANS	NOAA	1	WORLD	3/69- 6/72	7
205	SSCC	DATA TRANS	NOAA	1	WORLD	3/69- OPEN	8372
193	HEFAX	DATA TRANS	NOAA	1 2	WORLD	3/69- OPEN	5957
210	MSSCC	METEOR.	NOAA	1	WORLD	3/69- 6/72	7
205	SSCC	METEOR.	NOAA	1	WORLD	3/69- OPEN	8372
183	WEFAX	METEOR.	NOAA	1	HORLD	3/69- OPEN	5957
235	VHF HAVAII	EDUCATION	PEACESAT	1	PACIFIC'	2/72- OPEN	6942
235	VHF HAUATT	MEDICAL	PEACESAT PSSC	1.	PACIFIC Sahoa	2/72- OPEN	6942
340	SAMOA TV SAMFE SMF SEARCH	BROADCAST Law enforc	PUBLIC SYST INC	1		9/77- OPEN	53 68
258 253	SHF VLBI	TIME/FREQ	RADIO RES LABS	1	U.S. Japan	12/71-12/71	5
304	VHF OPN	TIME/FREQ	RADIO RES LABS	i	JAPAN	67- OPEN	158
284	VHF HIGH NOTE	RANGING	SANDIA/AEC	i	U.S.	3/71- 6/72	5
253	SHF VLBI	TIME/FREQ	SMITHSONIAN INS	i	U.S.	5/71-10/72	2
285	VHE STANFORD	EDUCATION	STANFORD UNIV	î,	U.S. (WEST)	\$/71- 6/72	2
227	HET ALASKA	EDUCATION	ST. OF ALASKA	i	ALASKA	6/69- OPEN	11314
227	HET ALASKA	MEDICAL	ST. OF ALASKA	i	ALASKA	6/69- OPEN	11314
263	TELESAT	HAVE PROP	TELESAT CANADA	ī	CANADA	9/72- 9/72	136
239	VHF VANGUARD	CONFERENCE.	USCE	ī	ATLANTIC	6/68- 7/69	12
239	VHF VANGUARD	DATA TRANS	USCG	ī	ATLANTIC	6/68- 7/69	12
290	VHF BERING SEA	SUPPORT	US/USSR	ī	BERING SEA	12/72- 3/73	43
329	NORPAX	SUPPORT	U. OF CAL/SAVY	ī	N. PACIFIC	5/77- 6/77	53
305	VHF ALOHA	COMPUTER	U. OF HAMAIT	ī	PACIFIC	72- OPEN	1167
320	SANOA	EDUCATION	U. SO. PACIFIC	1	SANDA	1/77- OPEN	258
297	VHF USP/FIJI	EDUCATION	U. SO. PACIFIC	i	PACIFIC	1/74- OPEN	2667
250	L-BAND RANGING	RANGING	WESTINGHOUSE	1	U.S. (WEST)	2/71- 5/71	6
342	PERU	SUPPORT	ADVENTURES UNL.	3	PERU	6/78- 7/78	46
264	HARAD/AII/PLACE	DATA TRANS	AII	3	WORLD	1/73- OPEN	131
264	MARAD/AIT/PLACE	MARITIME	AII	3	WORLD	1/73- OPEN	131
286	HET (ARC)	EDUCATION	APP. REG. COMM.		APPALACHIA	6/74- OPEN	536
185	VHF A/C	A/C COMM	ARING	3	U.S.	1/67- 6/70	308
319	SIRIUS	RANGING	BAKER DEV CORP.	3	BERHUDA	12/76- 1/77	40

⁻ ATS SCHEDULED TIME/CTS ACTUAL TIME

ID.							
	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS: •
335	WHE SAR SIN	RANGING	BAKER DEV CORP	3	BERMUDA	6/77 9/77	15
314	SIRIUS	SUPPORT	BAKER DEV CORP	3	BERHUDA	12/74- 1/77	40
251	L-BAND DOT	DATA TRANS	BOEING	3	N. AMERICA	4/74-10/76	128
289	VHF CALYPSO	DATA TRANS	COUSTEAU BROUP	3	ANTARCTICA	6/72- 1/76	358
284	VHF CALYPSO	SUPPORT	COUSTEAU GROUP	3	ANTARCTICA	6/72- 1/76	358
257	FLTAC	CONFERENCE	DEPT OF NAVY	3	W. HEMIS.	1/77- OPEN	391
333	U. OF W. INDIES	EDUCATION	DEPT OF ST/AID	3	JAHATCA	1/78- 6/78	223
344	BARBADOS	MEDICAL	DEPT OF ST/AID	3	BARBADOS	8/70- 9/78	14
314	ORI	DATA TRANS	DESERT RES INST	Š	ANTARCTICA	12/76- 1/77	627
316	Z NO	HETEOR.	DESERT RES INST	3	ANTARCTICA	12/76- 1/77	627
310	VHF DEA	CONFERENCE	DRUG ENF AGY	3	U.S.	4/76- OPEN	131
310	VHF DEA	RANGING	DRUG ENF AGY	3	U.S.	4/76- OPEN	131
315	ERDA	DATA TRANS	ERDA	3	PACIFIC	7/76- 8/76	5
315	ERDA	SUPPORT	ERDA	3	PACIFIC	7/76- 8/76	Š
310	VHF DEA	CONFERENCE	33	3	U.S.	4/76- OPEN	131
288	6E/MARAD	DATA TRANS	ĞĒ	3	ATLANTIC	4/72- 5/72	:46
228	VHF SE	DATA TRANS	6E	3	BERHUDA	2/69- 4/71	142
284	GE/MARAO	MARITIME	38	3	ATLANTIC	4/72- 5/72	.46
228	VHF GE	MARITIME	6E	ž	BERMUDA	2/69- 8/71	
261	SE L-BAND	RANGING	6E	3			142
234		RANGING	-		N. AMERICA	6/70-10/72	51
288	SE/FAA GE/HARAD		SE	3	N. ATLANTIC	11/69- 6/71	**
		RANGING	GE	3	ATLANTIC	4/72- 5/72	46
261	L-BAND TRILAY	RANGING	GE .	3	U.S.	1/74- 1/76	78
310	VHF DEA	RANGING	GE .	3	U.S.	4/76- OPEN	131
224	VHF GE	RANGING	GE .	3	BERMUDA	2/69- 8/71	142
107	SPEC SHF	SUPPORT	66	3	W. HEMIS.	68- 70	1613
293	SE/EXXON	DATA TRANS	BE & EXXON	3	ATLANTIC	7/73- 2/74	2.36
293	BE/EXXON	MARITIME	GE E EXXON	3	ATLANTIC	7/73- 2/74	186
542	SE/EXXON	RANGING	SE E EXXON	2	ATLANTIC	7/73- 2/74	186
294	SP HET	SUPPORT	HET	2	u.s.	1/73- 0/77	1718
317	LAMONT	SUPPORT	LAMONT/DOHERTY	3	SO. OCEAN	10/76- 3/77	161
520	AHL BLICH	SUPPORT	HAX PLANCK INST	3	W. HEHIS.	3/77 + 9/71	176
292	VHF CLIPPER	SUPPORT	HOODY COLLEGE	3	ATLANTIC	6/- 6/77	342
231	VHF MSFN PROP	NAVE PROP	HSFN NETWORK	3	W. HEMIS.	9/76- 2/71	22 '
104	LAUNCH SUPPORT	SUPPORT	NASA	3	U-S-	1/67- 8/76	369
211	GSFC	DENO	NASA/GSFC	3	U-S-(EAST)	7/76- OPEN	1705
520	VHF B/ION	SUPPORT	NASA/WALLOPS	3	W. HEHIS.	3/71- 9/71	176
238	YHF NBS	TIME/FREQ	NAT BUR OF STDS	3	W. HEMIS.	8/71- 8/72	327
302	NEA	EDUCATION	NAT EDUC ASSOC	3	APPAL/ALASK	1/76- 4/77	76
316	NSTL	KEDICAL	NAT SP TECH LAB	3	U.S. (SOUTH)	10/76-10/76	71
343	ORANGE	SUPPORT	NAT. SC. FOUND.	3	ANTARCTICA	7/78- 8/78	176
226	WHF NETHERLAND	MARITIME	NE THERLANDS	3	ATLANTIC	8/70-12/71	265
210	MSSCC	DATA TRANS	NOAA	3	WORLD	3/69- OPEN	26966
205	SSCC	DATA TRANS	NOAA	3	WORLD	3/69- OPEN	20
183	WEFAX	DATA TRANS	NOAA	3	WORLD	3/69- OPEN	3943
211	IDCS	HETEOR.	NOAA	3 🐬	U.S.	11/67-10/72	1050
210	MSSCC .	METEOR.	NOAA	3	WORLD	3/69- OPEN	26964
205	SSCC	HETEOR.	NOAA	3	WORLD	3/69- OPEN	20
183	WEFAX	HETEOR.	NOAA	3	WORLD	3/69- OPEN	3943
211	IDCS	SAT PHOTOS	NOAA	3	U.S.	11/67-10/72	1050
301	WHE GATE	SUPPORT	NOAA .	3	UNKNOWN	1/74= 9/74	388
522	VHF HORMAY	HETEOR.	NORWAY	3	N. ATLANTIC	11/70- 2/71	22
233	VHF NORWAY	RANSING	NORWAY	Š	N. ATLANTIC	11/70- 2/71	22
	PLU	BROADCAST	PROJECT LOOK-UP	3	PUERTO RICO	1/76- OPEN	87
331	PLU	84440rv31	LMARKI FRAKAR		PUEKIU KILU	A/(B- UPCH	5/

⁻ ATS SCHEDULED TIME/CTS ACTUAL TIME

ID#	EXP. NAME	f CAT	EXPERIMENTER	SAT	LOCATION	CHRONOL OGY	HRS	•
346	SAMOA TV SARFE	BROADCAST	PSSC	3	SAMOA	9/77- OPEN	96	
253	SHF VLBI	TIME/FREQ	RADIO RES LABS	3	JAPAN	1/77- 2/77	190	
284	VHF HIGH NOTE	RANGING	SANDIA/AEC	3	U.S.	3/71- 6/72	5	
287	VHF SEEK	METEOR.	SIERRA RES CORP	3	U.S.	1/72-12/72		
253	SHF VLBI	TIME/FREG	SMITHSONIAN INS	3	U.S.	5/71-10/72	190	
316	NSTL	MEDICAL	SO REQ HED CONS	3	U.S. (SOUTH)	10/76-10/76	71	
236	VHF BRAZIL	EDUCATION	STANFORD UNIV	3	W. HEMIS.	2/70- OPEN	38	
205	VHF STANFORD	EDUCATION	STANFORD UNIV	3	U.S. (WEST)	5/71- 6/72	139	
324	SIPLE	SUPPORT	STANFORD UNIV	3	W. MEMIS.	2/77- OPEN	1166	
330	MONTANA	SUPPORT	ST. OF MONTANA	3	MONTANA	6/77-11/77	163	
325	GYRE	SUPPORT	TEXAS ACM	3	W. HEMIS.	4/77-10/78	315	
309	NSF	SUPPORT	TEXAS AEM	3	ATLANTIC	3/76- 9/76	161	
292	WHF CLIPPER	SUPPORT	TEXAS AEM	3	ATLANTIC	6/73- 8/77	342	
304	VHF DRAKE	SUPPORT	TEXAS AGM	3	ANTARCTICA	1/75- OPEN	428	
263	VHF UCLA	EDUCATION	TRU	3 '	U.S. (MEST)	9/71-10/71	15	
583	VHF UCLA	EDUCATION	UCLA	3	U.S. (WEST)	7/71-10/71	15	
225	VHF ENGLAND	MARITIME	UNITED KINDSOM	3	ATLANTIC	8/70-12/70	191	
239	VHF VANGUARD	CONFERENCE	USCE	3	ATLANTIC	6/68-18/74	28	
265	VANGUARD	DATA TRANS	USCB	3	ATLANTIC	3/72- 4/73	78	
265	VANGUARD	DATA TRANS	USCE	3	PACIFIC	3/72- 4/73	78	
239	VHF VANGUARD	DATA TRANS	USCG	3	ATLANTIC	6/68-10/74	26	
307	VHF OCEAN	SUPPORT	U. OF MIAMI	3	ATLANTIC	12/77- OPEN	2291	
. 332	ENDEAVOR	SUPPORT	U. OF RHODE ISL	3	ATLANTIC	7/77- 1/78	168	
250	L-BAND RANGING	RANGING	WESTINGHOUSE	3	U.S. (WEST)	2/71- 5/71	C	
322	HHOI	SUPPORT	HOODS HOLE INST	3	PACIFIC	1/77- 2/77	244	
248	SP L-BAND	CONFERENCE	AII	5	U.S.	8/74- 4/75	135	
249	HARAD	DATA TRANS	AII	5	W. HEMIS.	3/70-12/71	65	
264	HARAD/ATT/PLACE	DATA TRANS	ÄÏÏ	5	MORLD	1/73 - OPEN	912	
248	SP L-BAND	DATA TRANS	ĀĪĪ	5	U-S-	8/74- 4/75	135	
249	HARAD	MARITIME	AII	Š	W. HEMIS.	3/70-12/71	65	
264	HARAD/AII/PLACE	MARITIME	AII	5	WORLD	1/73- OPEN	912	
247	ALPHA-2	RANGING	AII	5	ATLANTIC	7/70- 2/71	88	
249	MARAD	RANGING	AII	5	N. HEMIS.	3/70-12/71	65	
264	HARAD/AII/PLACE	RANGING	AII	5	HORLD	1/73- OPEN	912	i
251	L-BAND DOT	RANGING	BOEING	5	N. AMERICA	2/71- 7/74	557	
252	L-BAND FAA	ranging	BOEING	5	N. AMERICA	4/71= 4/72	275	
260	CRC C/L-BAND	HAVE PROP	CANADA	5	CANADA	9/71- 5/72	113	
259	COMSAT C/L PROP	MAVE PROP	CONSAT LABS	5	H. HEMIS.	1/72- 4/72	37	
252	L-BAND FAA	RANGING	FAA	5	N. AMERICA	4/71- 4/72	275	
261	GE L-BAND	RANGING	GE	5	N- AMERICA	6/70- 6/73	152	
268	L-BAND TRILAT	RANGING	GE	5	U.S.	1/74- 1/76	172	
249	MARAD	DATA TRANS	MARAD	5	W. HEMIS.	3/70-12/71	65	
249	MARAD	MARITIME	MARAD	5	W. HEHIS.	3/70-12/71	65	
106	LAUNCH SUPPORT	SUPPORT	NASA	5	U.S.	3/67-10/72	69	
244	MMW REG 1	WAVE PROP	NASA/GSFC	5	N. AMERICA	8/69- 9/71	1866	
245	MMW REG. 2	WAVE PROP	NASA/GSFC	5	No AMERICA	8/69- 9/71	326	
253	SHF VLBI	TIME/FREQ	SMITHSONIAN INS	5	U .S .	5/71-10/72	Ö	
247	ALPHA-2	RANGING	USAF/SAMSO	5	ATLANTIC	7/70- 2/71	88	
265	V ANGUARD	RANGING	USCE	5	ATLANTIC	3/72- 4/73	232	
265	VANGUARD	RANGING	USCG	. 5	PACIFIC	3/72- 4/73	232	
250	L-BAND RANGING	RANGING	WESTINGHOUSE	5	U.S. (WEST)	2/71- 5/71	79	
246	SSRA	RANGING .	WESTINGHOUSE	5	U-S-(VEST)	4/71- 5/71	1	
612	HET (ARC)	EDUCATION	APP. RES. COMM.	6	APPALACHIA	6/74- 6/75	1741	
673	NIE	EDUCATION	APP. REG. COMM.	•	APP ALACHIA	1/78- 7/79	3	
609	MMW	HAVE PROP	ARMY	6	NEW JERSEY	6/74- 7/79	3271	

[#] ATS SCHEDULED TIME/CTS ACTUAL TOME

ID#	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS .
607	MMU	HAVE PROP	BATTELLE LAB	6	WASHINGTON	6/74- 7/79	3271
609	MMW	HAVE PROP	BELL LAB	6	NEW JERSEY	6/74- 7/79	3271
664	SAR L-BAND C/O	RANGING	BOEING	6	N. ATLANTIC	8/74- 4/75	13
657	CRC	RANGING	CANADA/CRC	6	CANADA	9/74- 8/77	138
638	COMSAT PROP IND	HAVE PROP	COMSAT LABS	6	EUROPE	3/76- 7/76	667
658	COMSAT PROP US	MAVE PROP	COMSAT LABS	6	U.S. (EAST)	6/74- 6/78	159
609	MMU	MAVE PROP	COMSAT LABS	6	VIRGINIA	6/74- 7/79	3271
663	U. OF W. INDIES	BROADCAST	DEPT OF ST/AID	<u>.</u>	MEST INDIES	10/78- 7/79	66
663	U. OF W. INDIES	EDUCATION	DEPT OF STIAID	6	WEST INDIES	10/78- 7/79	66
608	PROPAGATION(E)		ESTIC	4	EUROPE	8/75-10/76	2263
664	SAR L-BAND C/O	RANGING	FAA	Ā	N. ATLANTIC	8/74- 4/75	13
674	SE L-BAND	RANGING	GE.	7	U.S. (EAST)	12/77- 7/79	573
674	GE L-BAND	SUPPORT	ĞË	Ĭ	U.S. (EAST)	12/77- 7/79	\$73
677	IHS	COMPUTER	INDIAN HLTH SER	7	ALASKA	9/78- 7/79	3/3
677	IHS	CONFERENCE	INDIAN HLTH SER	ĭ	ALASKA	9/78- 7/79	ä
612	HET (ARC)	MEDICAL	INDIAN HLTH SER	7	ALASKA	6/74- 6/75	1741
677	INS	MEDICAL	INDIAN HLTH SER	4			
647	SITE	BROADCAST	INDIA HE H SEK	7	ALASKA	9/78- 7/79	0
647	SITE	EDUCATION	INDIA	•	INDIA India	8/75- 8/76	2171
670	TEAM	EDUCATION	MONTANA ST U	•		8/75= 8/76	2171
668	MOTOROLA	WAVE PROP		7	HONTANA	9/77- 7/79	2
671	*** * * * * * * * * * * * * * * * * * *		MOTOROLA		U-S-	7/77- 9/78	47
	MSH	HEDICAL	HTN STS HTH COR	•	ROCKY HTHS	3/75- 5/75	22
605	PLACE	DATA TRANS	NASA	•	U-S.	9/74- 6/75	967
639	ALL DEHO	DENO	NASA	•	U-S-	6/74- 7/79	322
605	PLACE	RANGING	NASA	•	U.S.	9/74- 6/75	96 <u>7</u>
108	LAUNCH SUPPORT	SUPPORT	NASA	•	U.S.	7/77- 2/78	7
620	GEOS-C	DATA TRANS	NASA/GSFC	6	HORLD	9/79- 7/79	894
617	TDRE	DATA TRANS	NASA/65FC	•	MORLD	9/74- 7/79	622
618	TRUST	DATA TRANS	NASA/GSFC	6	U.S.	9/74- 7/75	40
602	VHRR RADIOMETER	METEOR.	NASA/GSFC	•	U.S.	6/74- 9/74	360
620	GEOS-C	, SAT CONTRL	NASA/GSFC	6	MORLD	9/74- 7/79	894
607	IHDRAS	SAT CONTRL	NASA/GSFC	6	U.S.	6/74- 7/75	5
610	INTERFEROMETER	SAT CONTRL	NASA/GSFC	6 :	U.S.	6/74-11/78	104
604	SAPPSAC	SAT CONTRL	NASA/GSFC	6 :	U.S.	6/74- 1/75	72
617	TDRE	SAT CONTRL	NASA/GSFC	6 -	WORLD	9/74- 7/79	622
631	ENV HEAS EXP	SCIENTIFIC	NASA/GSFC	6 .	U.S.	6/74- 7/77	50
649	MAG FIELD STUDY	SCIENTIFIC	NASA/GSFC	6	U.S.	4/75- 6/75	295
609	MHH	WAVE PROP	NASA/GSFC	6	U.S.	6/74- 7/79	3271
601	RADIO FREQ INT.	HAVE PROP	NASA/GSFC	6	U.S.	6/74-12/76	877
603	RAD ASTRO INTER	WAVE PROP	NASA/GSFC	6	WORLD	6/74- 6/75	9
640	APOLLO-SOYUZ	SUPPORT	NASA/HOUSTON	6	WORLD	10/74- 7/75	333
666	UHF/HRL	SCIENTIFIC	NAVAL RES LAB	6	U.S.	9/77- 5/78	18
609	MMU	HAVE PROP	NAVAL RES LAB	6	HARYLAND	6/74- 7/79	3271
606	RADIO BEACON	HAVE PROP	NOAA	6	U.S.	6/79- 7/79	0
606	RADIO BEACON	WAVE PROP	NOAA	6	EUROPE	6/74- 7/79	ā
609	MMM	HAVE PROP	OHIO STATE U.	6	OHIO	6/74- 7/79	3271
660	PLU	BROADCAST	PROJECT LOOK-UP	6	SO-AMERICA	1/76- 7/79	141
660	PLU	EDUCATION	PROJECT LOOK-UP		SO.AMERICA	1/76- 7/79	141
661	ALFE	BROADCAST	PSSC	Z	ALASKA	9/77-10/78	1979
672	SAMFE	BROADCAST	PSSC	7	SAMOA	9/77- 2/78	444
661	ALFE	DATA TRANS	PSSC	7	ALASKA	9/77-10/78	1979
667	ALVA	EDUCATION	PSSC	I	ALASKA	9/77- 7/79	
667	ALVÀ	EDUCATION		-			69
667	ALVA		PSSC	1	U.S. (WEST)	9/77- 7/79	69
667	and the second s	MEDICAL	PSSC		ALASKA	9/77- 7/79	69
	ALVA	HEDICAL	PSSC	•	U-S-(WEST)	9/77- 7/79	69

[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

ID#	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOSY	HRS .
612	HET (ARC)	EDUCATION	ROCKY HTH STS	•	ROCKY HTNS	6/74- 6/75	1741
612	HET (ARC)	EDUCATION	ST. OF ALASKA	6	ALASKA	6/74- 6/75	1741
650	MAG DATA	SCIENTIFIC	UCLA	•	U.S.	5/75- 0/76	402
423	L-BAND EXP	WAVE PROP	U. OF PA	•	U.S.(EAST)	8/76- 1/77	787
409	MME	HAVE PROP	U. OF TEXAS	6	TEXAS	6/79- 7/79	3271
612	HET (ARC)	EDUCATION	VETERANS ADM	6	APPALACHIA	6/74- 6/75	1741
612	HET (ARC)	HEDICAL	VETERANS ADM	6.	APPALACHIA	6/74- 6/75	1741
609	HHU	MAVE PROP	VIRGINIA POLY	6	VIRGINIA	6/70- 7/79	3271
612	HET (ARC)	EDUCATION	VANI	6	ALASKA/VASH	6/74- 6/75	1741
ělž	HET (ARC)	MEDICAL	TANT	Ď	ALASKA/YASH	6/74- 6/75	1791
609	MML	HAVE PROF	VESTINGHOUSE	6	HARYLAND	6/74- 7/79	3271

[.] ATE SCHEDULED TIME/CTS ACTUAL TIME

3.6 Sorted by Location

IO#	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOSY	HRS .	
CTS-22	ICE FLOW	DATA TRANS	NASA/LERC	CTS	ALASKA	8/76- 9/76	70	
300	ANE INCHIS	MEDICAL	IHCHIS	1	ALASKA	\$/74- 5/74	2	
227	HET ALASKA	EDUCATION	ST. OF ALASKA	1	ALASKA	4/49- OPEN	11314	
227	HET ALASKA	MEDICAL	ST- OF ALASKA	1	ALASKA	6/69- GPEN	11314	
677	IHS	COMPUTER	INDIAN HLTH SER	6	ALASKA	9/78- 7/79	٥	
677	IHS	CONFERENCE	INDIAN HLTH SER	Ĭ.	ALASKA	9/78- 7/79	Ğ	
612	HET (ARC)	MEDICAL	INDIAN HLTH SER	ě	ALASKA	6/79- 6/75	1741	
677	INS	MEDICAL	INDIAN HLTH SER	- A	ALASKA	9/78- 7/79	0	
661	ALFE	BROADCAST	PSSC	6	ALASKA	9/77-10/78	1979	
661	ALFE	DATA TRANS	PSSC	ě	ALASKA	9/77-10/78	1979	
667	ALVA	EDUCATION	PSSC	Ä	ALASKA	9/77- 7/79	69	
667	ALVA	MEDICAL	PSSC	Ă	ALASKA	9/77- 7/79	67	
612	HET (ARC)	EDUCATION	ST. OF ALASKA	6	ALASKA	6/74- 6/75	1741	
291	WHF ZURITA	SUPPORT	AEC	ĩ	ALASKA/HAW.	6/73-12/73	62	
CTS-13	DECENT MED ED	EDUCATION	U OF WASHINGTON	ČTS	ALASKA/WASH	3/77- OPEN	292	
CTS-13	DECENT HED ED	EDUCATION	IMAU	CTS	ALASKA/VASH	3/77- OPEN	292	
CTS-13	DECENT MED ED	MEDICAL	WAMI	CTS	ALASKA/WASH	3/77- OPEN	292	
612	HET (ARC)	EDUCATION	IMAH ,	Ā ·	ALASKA/WASH	6/74- 6/75	1741	
612	HET (ARC)	HEDICAL	IMAU	I	ALASKA/WASH	6/74- 6/75	1741	
316	DRI	DATA TRANS	DESERT RES INST	ĭ	ANTARCTICA	12/76- 1/77	10	
314	' DR I	METEOR.	DESERT RES INST	ī	ANTARCTICA	12/76- 1/77	10	
289	VHF CALYPSO	DATA TRANS	COUSTEAU GROUP	3	ANTARCTICA	6/72- 1/76	358	
269	VHF CALYPSO	SUPPORT	COUSTEAU GROUP	3	ANTARCTICA	6/72- 1/76	358	
316	DRI	DATA TRANS	DESERT RES INST	3	ANTARCTICA	12/76- 1/77	627	
318	ORI	METEOR.	DESERT RES INST	3	ANTARCTICA	12/76- 1/77	627	
343	ORANGE	SUPPORT	NAT. SC. FOUND.	3	ANTARCTICA	7/78- 8/78	176	
306	VHF DRAKE	SUPPORT	TEXAS AEH	3	ANTARCTICA	1/75- OPEN	428	
CTS-12	AESP II	EDUCATION	APP. REG. COMM.	CTS	APPALACHIA	PENDING	0	
286	HET (ARC)	EDUCATION	APP. REG. COMM.	3	APPALACHIA	6/74- OPEN	536	
612	HET (ARC)	EDUCATION	APP. REG. COMM.	6	APPALACHIA	6/74- 6/75	1741	
673	NIE	EDUCATION	APP. REG. CONN.	4	APPALACHIA	1/78- 7/79	3	
612	HET (ARC)	EDUCATION	VETERANS ACM	Ţ.	APPALACHIA	6/74- 6/75	1741	
612	HET (ARC)	MEDICAL	VETERANS ADM	Ţ.	APPALACHIA	6/74- 6/75	1741	
302	NEA	EDUCATION	NAT EDUC ASSOC	ĭ	APPAL/ALASK	1/76- 4/77	39	
302	NEA	EDUCATION	NAT EDUC ASSOC	3	APPAL/ALASK	1/76- 4/77	76	
288	GE/HARAD	DATA TRANS	6E	ī	ATLANTIC	4/72- 5/72	7	
288	GE/MARAD	MARITIME	ĞΕ	•	ATLANTIC	4/72- 5/72	• •	
288	6E/MARAD	RANGING .	6E	1	ATLANTIC	4/72- 5/72	7	
293	SE/EXXON	DATA TRANS	SE E EXXON	•	ATLANTIC	7/73- 2/74	90	1
293	GE/EXXON	MARITIME	GE & EXXON	î	ATLANTIC	7/73- 2/74	90	
293	GE/EXXON	RANGING	GE & EXXON	• •	ATLANTIC	7/73- 2/74	90	
292	VHF CLIPPER	SUPPORT	MOODY COLLEGE	•	ATLANTIC	7/73- 3/77	70	
239	VHF VANGUARD	CONFERENCE	USCS	•	ATLANTIC	4/64= 7/69	12	
239	VHF VANGUARD	DATA TRANS	USCE		ATLANTIC	4/48- 7/69	12	
284	GE/MARAD	DATA TRANS	68	ŝ	ATLANTIC	4/72- 5/72	46	
284	GE/MARAD	MARITIME	36 38	3	ATLANTIC	4/72- 5/72		
288	GE/MARAD	RANGING	GE	3			46	
293	GE/EXXON	DATA TRANS	SE & EXXON	3	ATLANTIC	4/72- 5/72 7/73- 2/74	186	
293	GE/EXXON	MARITIME	SE C EXXON	3	ATLANTIC	7/73- 2/74		
293	SE/EXXON	RANGING	SE E EXXON	3	ATLANTIC	7/73- 2/74	186 186	
292	VHF CLIPPER	SUPPORT	MOODY COLLEGE	3	ATLANTIC	6/73- 6/77	342	
226	VHF NETHERLAND	MARITIME	NETHERLANDS	3	ATLANTIC	4/70-12/71	265	
309	NSF	SUPPORT	TEXAS ACH	- 3	ATLANTIC	3/76- 9/76	161	
292	VHF CLIPPER	SUPPORT	TEXAS ALM	3	ATLANTIC	6/73- 8/77	342	
225	VHF ENGLAND	MARITIME	UNITED KINDSOM	3				
-63	ini cuapvun	DESTITUE	AUTIER UTURAL	3	ATLANTIC	8/70-12/70	191	

[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

3.6 Sorted by Location (cont.)

10.	EXP. NAME	GAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOSY	HRS .
239	VHF VANGUARD	CONFERENCE	USCE	3	ATLANTIC	6/68-10/74	28
265	VANGUARD	DATA TRANS	USCG	3	ATLANTIC	3/72- 4/73	76
239	VHF VANGUARD	DATA TRANS	USCG	3	ATLANTIC	6/68-10/74	24
307	VHF OCEAN	SUPPORT	U. OF HIAMI	3	ATLANTIC	12/77- OPEN	2241
332	ENDEAVOR	SUPPORT	U. OF RHODE ISL	3	ATLANTIC	ナノブブー ユノフロ	166
247	ALPHX-2	RANGING	ATI	5	ATLANTIC	7/70- 2/71	8.6
247	ALPHA-2	RANGING	USAF/SAMSO	\$	ATLANTIC	7/70- 2/71	
265	VANGUARD	RANGING	USCE	5	ATLANTIC	3/72- 4/73	232
344	BARBADOS	MEDICAL	DEPT OF ST/AID	3	BARBADOS	8/71- 9/71	14
290	VHF BERING SEA	SUPPORT	US/USSR	1	BERING SEA	12/72- 3/73	43
228	VHF BE	DATA TRANS	GE	1	BERMUDA	2/69- 8/71	41
220	VHF GE	MARITIME	GE	1	BERMUDA	2/69- 8/71	41
228	VHF GE	RANGING	GE	1	BERMUDA	2/69- 8/71	91
319	SIRIUS	RANGING	BAKER DEV CORP	3	BERMUDA	12/76- 1/77	40
335	VHF SAR SIM	RANGING	BAKER DEV CORP	3	BERMUDA	6/77- 9/77	15
319	SIRIUS	SUPPORT	BAKER DEV CORP	3	BERHUDA	12/76- 1/77	40
228	VHF GE	DATA TRANS	GE .	3	BERMUDA	2/69- 8/71	142
228	YHF BE	MARITIME	GE	3	BERHUDA	2/69- 8/71	142
228	YHF GE	RANGING	6E	3	BERHUDA	2/69- 8/71	142
CTS-16	PROJ INTERCHE	EDUCATION	ARCH OF S.F.	CTS	CALIFORNIA	3/76- 6/78	45
257	SHF CRC	WAVE PROP	CANADA/CRC	1	CANADA	1/71-12/71	76
263	TELESAT	HAVE PROP	TELESAT CANADA	1	CANADA	9/72- 9/72	726
260	CRC C/L-BAND	HAVE PROP	CANADA	5	CANADA	9/71- 5/72	113
457	CR C.	ranging	CANADA/CRC	6	CANADA	9/74- 8/77	128
336	ERDA/DOD	SUPPORT	ERDA	1	ENEWETAK	10/77- 9/78	47
636	COMSAT PROP IND	MAVE PROP	COMSAT LABS	•	EUROPE	3/76- 7/76	667
608	Propagation(E)	WAVE PROP	ESTEC	Ď	EUROPE	8/75-10/76	2263
606	RADIO BEACON	HAVE PROP	NOAA	.6	EUROPE	6/74- 7/79	0
647	SITE	BROADCAST	INDIA	6	INDIA	8/75- 8/76	2171
647	SITE	EDUCATION	INDIA	6	INDIA	8/75- 8/76	2171
333	u. of w. indies	EDUCATION	DEPT OF ST/AID	3	JAHAICA	1/78- 6/78	22,3
253	SHF VLBI	TIME/FREQ	RADIO RES LABS	1	JAPAN	1/77- 2/7	5
304	VHF OPN	TIME/FREQ	RADIO RES LABS	1	JAPAN	67- OPEN	158
253	SHF YLBI	TIME/FREQ	RADIO RES LABS	3	JAPAN	1/77- 2/77	190
CTS-25	CONGRESS	CONFERENCE		CTS	MARYLAND	4/77- 8/78	39
609	MMU	MAVE PROP	NAVAL RES LAB	•	MARYLAND	6/79- 7/79	3271
609	MMM	HAVE PROP	WESTINGHOUSE	•	MARYLAND	6/79- 7/79	3271 163
330	MONTANA	SUPPORT	ST. OF MONTANA	3	MONTANA	6/77-11/77	
670	TEAM	EDUCATION :	The state of the s	•	HONTANA	9/77- 7/79	2 3271
607	MMU	WAVE PROP	ARNY	6 .	NEW JERSEY	6/74- 7/79	3271
609	MMM	MAVE PROP	BELL LAB	1	NEW JERSEY	6/74- 7/79 6/70-10/72	
261	GE L-BAND	RANGING	6E	3	N. AMERICA N. AMERICA		126
251	L-BAND DOT	DATA TRANS	BOEING	3		4/74-10/76 6/70-10/72	51
261	GE L-BAND	RANGING	GE DASTNS	3 5	N. AMERICA N. AMERICA	2/71- 1/74	557
251	L-BAND DOT	RANGING	BOEING	5	N. AMERICA N. AMERICA	4/71- 4/72	275
252	L-BAND FAA	RANGING	BOEING	5	N. AMERICA	4/71- 4/72	275
252	L-BAND FAA	RANSING	FAA	5	N. AMERICA	6/70- 6/73	152
261	GE L-BAND MMW REG I	RANGING	GE Nasa/GSFC	\$ ·	N. AMERICA	8/69- 9/71	1866
244		WAVE PROP	NASA/GSFC	5	N. AMERICA	4/699/71	326
245	MMW REG 2	WAVE PROP RANGING	GE	1	N. ATLANTIC	11/69- 6/71	320
234	GE/FAA	RANGING	GE	3	N. ATLANTIC	11/69- 6/71	44
234 233	GE/FAA VHF NORWAY	METEOR.	NORWAY	3	N. ATLANTIC	11/70- 2/71	22
522	VHF NORWAY	RANGING	NORWAY	3	N. ATLANTIC	11/70- 2/71	22
664	SAR L-BAND C/O	RANGINS	BOEING	6	N. ATLANTIC	8/79- 4/75	13
	SAU F-BUAR PLA			•	An Wieseller	4,14 4,14	• •

[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

3.6 Sorted by Location (cont.)

10:	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS	
664	SAR L-BAND C/O	RANGING	FAA	6	N. ATLANTIC	8/74- 4/75	13	
324	NORPAX	SUPPORT	U. OF CAL/NAVY	1	N. PACIFIC	8/77- 6/77	53	
CTS-T	TEP/SHF	SAD TERM	NASA/LERC	CTS	OHIO	2/76- OPEN	439	
CTS-01	COMM LINK CHAR	HAVE PROP	OHIO STATE U	CTS	OHIO	2/76-12/77	315	
607	MMM	MAVE PROP	OHIO STATE U.	•	OHIO	6/74- 7/79	3271	
220	DISP	CONFERENCE	DEPT OF INTER	1	PACIFIC	12/77 - OPEN	1453	
315	ERDA	DATA TRANS	ERDA	1	PACIFIC	1/78- 1/79	146	
315	ERDA	SUPPORT	ERDA	1	PACIFIC	1/78- 1/79	146	
295	WHE NIAID	MEDICAL	NIAID	- <u>}</u>	PACIFIC	10/73- OPEN	237	
235	VHF HAVAII	EDUCATION	PEACESAT	1	PACIFIC	2/72- OPEN	4445	
235	VHF HABATI	MEDICAL	PEACESAT	1	PACIFIC	2/72- OPEN	6942	
305	VHF ALOHA	COMPUTER	U. OF HAWAII	į	PACIFIC	72- OPEN	1167	
297	VHF USP/FIJI	EDUCATION	U. SO. PACIFIC	ī	PACIFIC	1/74- OPEN	· 2667	
315	ERDA	DATA TRANS	ERDA	3	PACIFIC	7/76- 8/76	5	
315 265	ERDA Vanguard	SUPPORT Data Trans	ERDA USCG	3	PACIFIC	7/76- 8/76	5	
322	WHOI	SUPPORT	WOODS HOLE INST	3	PACIFIC	3/72- 4/73	78	
265	VANGUARD	RANGING	USCG NOTE INS!	5	PACIFIC PACIFIC	1/77- 2/77	244 232	
342	PERU	SUPPORT	ADVENTURES UNL.	3	PERU	3/72- 4/73 6/78- 7/78	46	
331	PLU	BROADCAST	PROJECT LOOK-UP	3	PUERTO RICO	1/76- OPEN	47	
331	PLU	EDUCATION	PROJECT LOOK-UP	ž	PUERTO RICO	1/76- OPEN	87	
CTS-17	HEALTH ED TV	EDUCATION	ASSOC OF W HOSP	CTS	ROCKY HTNS	PENDING	á	
CT5-17	HEALTH ED TV	MEDICAL	ASSOC OF W HOSP	CTS	ROCKY HTNS	PENDING	Ö	
671	MSH	HEDICAL	HTH STS HTH COR	4	ROCKY HTNS	3/75- 5/75	22	
612	HET (ARC)	EDUCATION	ROCKY HTN STS	_	ROCKY MTNS	6/74- 6/75	1741	
346	SAHOA TV SAMFE	BROADCAST	PSSC	i	SAMOA	9/77- OPEN	53	
320	SANGA	EDUCATION	U. SO. PACIFIC	ī	SAMOA	1/77- OPEN	258	
340	SAHOA TV SAHFE	BROADCAST	PSSC	3	SANDA	9/77- OPEN	76	
672	SAMPE	BROADCAST	PSSC	6	SAMOA	9/77- 2/78	444	
660	PLU	BROADCAST	PROJECT LOOK-UP	•	SO.AMERICA	1/76- 7/79	141	
660	PLU	EDUCATION	PROJECT LOOK-UP	6	SO.AMERICA	1/76- 7/79	141	
317	LAMONT	SUPPORT	LAMONT/DOHERTY	3	SO. OCEAN	10/76- 3/77	161	
CTS-01	COMM LINK CHAR	WAVE PROP	U. OF TEXAS	CTS	TEXAS	2/76-12/77	315	
609	MMM	HAVE PROP	U. OF TEXAS	6	TEXAS	6/74- 7/79	3271	
301	VHF GATE	SUPPORT	NOAA	.3	UNKNOWN	1/74- 9/74	308	
CTS-30	TER OF TOMORROW	GRD TERM	FCC	CTS	U.S.	3/78-12/78	56	
CTS-33	WIDE BAND COMM.	CONFERENCE	GTE LABS	CTS	U.S. :	1/79- OPEN	6	
CTS-07	BIOMED COMMUN	EDUCATION	LISTER HILL	CTS	U.S.	6/77- OPEM	404	
CTS-07	BIOMED COMMUN	MEDICAL	LISTER HILL	CTS	U.S.	6/77- OPEN	404	
CTS-18	INTRANASA COMM	CONFERENCE	NA SA/ARC	CTS	U.S.	5/76- OPEN	362	
CTS-18	INTRANASA COMM	CONFERENCE	NA SA / GSF C	CTS	U-S-	5/76- OPEN	362	
CTS-20	ADV GRD REC EQ	GRD TERM	NASA/GSFC	CTS	U.S.	4/76- 4/78	87	
CTS-01	COMM LINK CHAR	HAVE PROP	NASA/GSFC	CTS	U.S.	2/76-12/77	315	
CTS-18	INTRANASA COMM	CONFERENCE	NA SA/LERC	CTS	U.S.	5/76- OPEN	382	
CTS-27	WOMENS SAT SER	CONFERENCE	NAT WOMENS AG	CTS	U.S. :	PENDING	0	
CTS-21	PSSC	DEMO	PSSC	CTS	U.S.	2/77 - OPEN	284	
CTS-21	PSSC	SUPPORT	PSSC	CTS	U-S-	2/77- OPEN	284	
CTS-09 CTS-29	SALINET Univ Grad Study	EDUCATION EDUCATION	SALINET ASSOC	CTS	U.S.	10/77- 4/78	10	
312	ALC GRAD SIGHT	CONFERENCE	VARIAN ASSOC Amer Lutheran C		U.S.	5/78-12/78	49	
185	VHF A/C	A/C COMM	ARINC	1	U.S.	6/76- OPEN	219	
268	L-BAND TRILAT	RANGING	EE WINC	ì	U.S. U.S.	1/67- 6/70	264 19	
294	SP HET	SUPPORT	HET	i	U.S.	1/73- 8/77	1654	
108	LAUNCH SUPPORT	SUPPORT	NASA	i	U.S.	1/67- 1/76	930	
254	SHE SEARCH	LAW ENFORC	PUBLIC SYST INC	i	U.S.	12/71-12/71	68	
	with Spanish	ALA PIN AUR		•	4131	40/64-46/64		

[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

3.6 Sorted by Location (cont.)

I	D#	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS	•
21	84	VHF HIGH NOTE	RANGING	SANDIA/AEC	1	U.S.	3/71- 6/72	5	
2	53 :	SHF VLBI	TIME/FREG	SMITHSONIAN INS	1	U.S.	5/71-10/72	2	
1	45	VHF A/C	A/C COMM	APINC	3	U.S.	1/67- 6/70	300	
3	10	VHF DEA	CONFERENCE	DRUG ENF AGY	3	U.S.	4/76- OPEN	131	
	10	VHF DEA	RANGING	DRUG ENF AGY	3	U.S.	4/76- OPEN	131	
3	10	VHF DEA	CONFERENCE	38	3	U.S.	4/76- OPEN	131	
2	68	L-BAND TRILAT	RANGING	38	3	U.S.	1/74- 1/76	78	
3	10	VHF DEA	RANGING	GE	3	U.S.	4/76- OPEN	131	
2	74	SP HET	SUPPORT	HET	3	U.S	1/73- 8/77	1918	
- 1	08	LAUNCH SUPPORT	SUPPORT	NASA	3	U-S.	1/67- 8/74	364	
2,	11	IDCS	HETEOR.	HOAA	3	U.S.	11/67-10/72	1050	
2	11	IDCS	SAT PHOTOS	NOAA	3	U.S.	11/67-10/72	1050	
2	64 ;	VHF HIGH NOTE	ranging	SANDIA/AEC	3	U.S.	3/71- 6/72	5	
2	87	VHF SEEK	METEOR.	SIERRA RES CORP	3	U-S-	1/72-12/72	•	
2	53	SHF VLBI	TIME/FREQ	SMITHSONIAN INS	3	U.S.	5/71-10/72	190	
2	44	SP L-BAND	CONFERENCE	AII	5	U-S-	8/74- 4/75	135	
2	46	SP L-BAND	DATA TRANS	AII	5	U.S.	8/74- 4/75	135	
3	68	L-BAND TRILAT	ranging	GE	5	U-S-	1/74- 1/76	172	
1	08	LAUNCH SUPPORT	SUPPORT	NASA	5	U.S.	3/67-10/72	69	
2	53	SHF VLBI	time/freq	SMITHSONIAN INS	5	U.S.	5/71-10/72	0	
6	64	MOTOROLA	HAVE PROP	HOTOROLA	•	u.s.	7/77- 9/78	47	
•	05	PLACE	DATA TRANS	NASA	6	U.S.	9/74- 6/75	767	
•	39	ALL DEMO	DENO	NASA	6	U.S.	6/74- 7/79	322	
•	05	PLACE	ranging	NASA	•	U.S.	9/74- 6/75	967	
11	04	LAUNCH SUPPORT	SUPPORT	NASA	6	U.S.	7/77- 2/78	7	
6,	18 .	TRUST	DATA TRANS	NASA/GSFC	.6	U.S.	9/74- 7/75	40	
- 6	02	WHRR RADIOMETER	METEOR.	NASA/GSFC	•	U-5.	6/74= 9/74	360	
	07	IHDRAS	SAT CONTRL	NASA/6SFC	•	U.S.	6/79- 7/75	5	
	10	INTERFEROMETER	SAT CONTRL	NASA/GSFC	•	U.S.	6/74-11/78	104	
	04	SAPPSAC	SAT CONTRL	NASA/ESFC	•	u.s.	6/74- 1/75	72	
	31	ENV MEAS EXP	SCIENTIFIC	NASA/GSFC	•	U.S.	6/74- 7/77	50	
	49	MAG FIELD STUDY	SCIENTIFIC	NASA/GSFC	6	U.S.	4/75- 6/75	295	
:	09	MMU	WAVE PROP	NASA/GSFC	•	U.S.	6/74-7/79	3271	
•	01	RADIO FREQ INT.	HAVE PROP	NASA/GSFC		U.S.	6/74-12/76	877	
	66	UHF/HRL	SCIENTIFIC	NAVAL RES LAB	. 🌘	U-S-	9/77- 5/78	10	
	06	RADZO BEACON	WAVE PROP	NOAA		U.S.	6/74- 7/79	0	
	50	MAG DATA	SCIENTIFIC	UCLA	•	U.S.	5/75- 8/76	90.3	
	TS-24	DICE	DATA TRANS	COMSAT LABS	CTS	U.S. (EAST)	5/76- OPEN	131	
	TS-06	TET/COMSAT	GRD TERM	COMSAY LABS	CTS	U-S-(EAST)	2/76- OPEN	266	
_	75-24	OICE TELECONFERENCE	DATA TRANS Conference	NASA/LERC	CTS	U.S.(EAST)	6/77- OPEN	131	
	75-15	DATA XMISSION		WESTINGHOUSE DUKE U. NED CEN	CTS	U.S.(EAST)	2/76- QPEN 11/71-11/71	286	
	02	GSFC	MEDICAL	P	1	U.S. (EAST)		54	
	11		DENO Wave Prop	NASA/GSFC Combat labs	3	U.S.(EAST)	7/76- OPEN 6/79- 6/78	1705	
	58 · 74	COMSAT PROP US GE L-BAND	RANGING	GE	6	U.S. (EAST)	12/77- 7/79	159 573	
	74	GE L-BAND	SUPPORT	GE :	7 :	U.S.(EAST)	12/77- 7/79	573	
					_	* 5. * C * 1 E * 1 L 1 L			
	23 82	L-BAND EXP	WAVE PROP	U. OF PA Lister Hill	i	U.S.(EAST)	8/76- 1/77 10/71- OPEN	787 619	
	62	VHF NLH	MEDZGAL.	LISTER HILL		U.S.(N.V.)	10/71- OPEN	619	
_	TS-19	SAT. DIST.	DATA TRANS	SECA HILL	1 CTS	U.S.(SOUTH)	12/76- OPEN	655	
	16	NSTL	MEDICAL	NAT SP TECH LAB	3	U-S-(SOUTH)	10/76-10/76	71	
	16 :	NSTL	MEDICAL	SO REO MED CONS	3	U.S.(SOUTH)	10/76-10/76	71	
	TS-35	CT SCANNING NET	MEDICAL	U. OF COLORADO	CTS	U.S. (MEST)	4/79- 7/79	Ö	
	TS-11	HEALTH/COMMUN	EDUCATION	VETERANS ADM	CTS	U.S.(WEST)	6/77- OPEN	306	
	TS-11	HEALTH/COMMUN	MEDICAL	VETERANS ADM	CTS	U.S.(WEST)	6/77- OPEN	304	
•				TE I DURING AUT	- 1 -		DEFE	304	

⁻ ATS SCHEDULED TIME/CTS ACTUAL TIME

3.6 Sorted by Location (cont.)

100	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS .
285	VHF STANFORD	EDUCATION	STANFORD UNIV	1	U-S-(WEST)	5/71- 6/72	2
250	L-BAND RANGING	RANGING	MESTINGHOUSE	ĺ	U.S. (MEST)	2/71- 5/71	ī
285	VHF STANFORD	EDUCATION	STANFORD UNIV	j	U.S. (VEST)	5/71- 6/72	139
283	VHF UCLA	EDUCATION	TRU	š	U.S. (MEST)	9/71-10/71	15
283	YHF UCLA	EDUCATION	UCLA	i	U.S. (MEST)	9/71-10/71	15
			- : - : - :	Š			- 7
250	L-BAND RANGINS	ranging	VESTINGHOUSE	-	U-S-(VEST)	2/71- 5/71	0
250	L-BAND RANGING	ranging	WESTINGHOUSE	<u> </u>	U.S. (UEST)	2/71- 5/71	99
246	SSRA	Ransing	VESTINGHOUSE	\$	U.S. (MEST)	4/71- 5/71	1
667	ALVA	EDUCATION	PSSC	•	U.S.(VEST)	9/77- 7/79	69
667	ALVA	MEDICAL	PSSC	6	U.S.(WEST)	9/77- 7/79	69
CTS-04	COLLEGE CURR	EDUCATION	CARLETON UNIV	CTS	U.S./CANADA	2/76- OPEN	446
CTS-04	COLLEGE CURR	EDUCATION	STANFORD UNIV	CTS	U.S./CANADA	2/76- OPEN	446
CTS-26	VLBI	TIME/FREG	UNIV OF ILL	CTS	U.S./CANADA	5/78=12/76	120
CTS-31	3 WAY TIME TRAN	TIME/FREQ	U.S. NAVAL OBS.	CTS	U-S-/CANADA	1/79- 7/79	0
CTS-26	PROJ ADJUNCT	CONFERENCE	SAT BUS SYSTEMS	CŤŠ	VIRGINIA	9/77- 2/78	178
CTS-26	PROJ ADJUNCT	DATA TRANS	SAT BUS SYSTEMS	CTS	VIRGINIA	9/77- 2/78	. 178
CTS-01	COMM LINK CHAR	WAVE PROP	VIRGINIA POLY	CTS	VIRGINIA	2/76-12/77	315
609	HMU	WAVE PROP	COMSAT LABS	6	VIRGINIA	6/79- 7/79	3271
609	HHU	HAVE PROP	VIRGINIA POLY		VIRGINIA	6/79- 7/79	3271
609	MMM	MAVE PROP	BATTELLE LAG		WASHINGTON	6/74- 7/79	3271
663	U. OF W. INDIES	BROADCAST	DEPT OF STAID	Ţ.	WEST INDIES	10/78- 7/79	66
663		EDUCATION		7			64
	u. of w. indies		DEPT OF ST/AID	•	WEST INDIES	10/70- 7/79	● #
210	MSSCC	DATA TRANS	NOAA	1	WORLD	3/69- 6/72	
205	SSCC	DATA TRANS	HOAA	1	WORLD	3/69- OPEN	8372
183	MEFAX	DATA TRANS	NOAA	3	WORLD	3/69- OPEN	5757
210	MSSCC	METEOR.	NOAA	1	WORLD	3/69- 6/72	7
205	3565	METEOR.	NOAA	1	MORLD	3/69- OPEN	8372
182	WEFAX	HETEOR.	NOAA	1	WORLD	3/69- OPEN	5957
264	MARAD/AII/PLACE	DATA TRANS	AII	3	WORLD	1/73- OPEN	131
264	HARAD/AII/PLACE	MARITIME	ATI	3	WORLD	1/73- OPEN	131
210	HSSCC	DATA TRANS	NOAA	3	HORLD	3/69- OPEN	26966
205	SSCC	DATA TRANS	NOAA	3	VORLD	3/69- OPEN	20
183	WEFAX	DATA TRANS	NOAA	Š	MORLD	3/49- OPEN	3793
210	HSSCC	METEOR.	NOAA	3	WORLD	3/69- OPEN	26966
205	SSCC	METEOR.	NOAA	3	WORLD	3/69- OPEN	20
183	VEFAX	METEOR.	NOAA	3	MORLD	3/69- OPEN	3943
264	MARAD/AII/PLACE	DATA TRANS	AII	Ĭ.	WORLD	1/73- OPEN	912
264	MARAD/AIT/PLACE	MARITIME	AII		MORLD	1/73- OPEN	912
264	HARAD/ATT/PLACE	RANGING	AII	3	WORLD	1/73- OPEN	912
620	SEOS-C	DATA TRANS	NASA/GSFC	7	WORLD	9/79- 7/79	874
617	TORE	DATA TRANS	HASA/GSFC	•	WORLD	9/74- 7/79	622
620	SEOS-C	SAT CONTRL	NASA/6SFC	•	WORLD	9/74- 7/79	194
617	TORE	SAT CONTRL	NASA/6SFC	•	WORLD	9/74- 7/79	622
603	RAD ASTRO INTER	MAVE PROP	NASA/6SFC	6	HORLD	6/74- 6/75	9
640	APOLLO-SOYUZ	SUPPORT	NASA/HOUSTON	6	WORLD	10/74- 7/75	333
261	LOS ALAMOS	A/C COMM	EBLE	1	W. HEMIS.	19/70-10/71	265
232	YHF EGEG	A/C COMM	EGEG	1	. W. HEMIS.	6/68-10/72	48
232	YHF EGEG	SUPPORT	EGEG	1	W. HEHIS.	6/68-10/72	48
107	SPEC SHF	SUPPORT	38	1	W. HEMIS.	68- 70	1929
202	S/C SUPPORT	SUPPORT	NASA	1	W. HEMIS.	4/69- 70	270
227	HET ALASKA	EDUCATION	NAT EDUC ASSOC	ī	W. HEHIS.	6/67- OPEN	11314
321	FLTAC	CONFERENCE	DEPT OF NAVY	3	W. HEMIS.	1/77- OPEN	391
107	SPEC SHF	SUPPORT	GE	3	W. HEHIS.	68- 70	1613
230	VHF B/ION	SUPPORT	MAX PLANCK INST	3	W. HENIS.	3/71- 9/71	176
231	VHF MSFN PROP	MAVE PROP	MSFN NETWORK	š	W. HEMIS.	9/70- 2/71	22
6-4	THE DAIN THEF	SAIL FRUP	HALM MPINAM	•	454730	711V= 6711	

⁻ ATS SCHEDULED TIME/CTS ACTUAL YING

3.6 Sorted by Location (cont.)

EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS •
VHF B/ION	SUPPORT	NASA/WALLOPS	3	W. HEMIS.	3/71- 9/71	176
VHF NBS	TIME/FREQ	NAT BUR OF STOS	3	W. HEMIS.	8/71- 8/72	327
VHF BRAZIL	EDUCATION	STANFORD UNIV	3	W. HEMIS.	2/70- OPEN	38
SIPLE	SUPPORT	STANFORD UNIV	3	W. HEMIS.	2/77- OPEN	2166
	SUPPORT	TEXAS AGN	3	W. HEMIS.	4/77-10/78	315
	DATA TRANS	ATI	ŝ	W. HENTS.	3/70-12/71	65
		AII	Š	W. HEMIS.	3/70-12/71	65
		AII	Š	W. MEMIS.	3/70-12/71	45
			Š	W. HENIS.	1/72- 4/72	37
			Š	W. HEMIS.	3/70-12/71	65
HARAD	MARITIME	MARAD	5	W. HEMIS.	3/70-12/71	65
	VHF B/ION VHF HBS VHF BRAZIL SIPLE GYRE MARAD MARAD MARAD COMSAT C/L PROP	VHF B/ION SUPPORT VHF NBS TIME/FREQ VMF BRAZIL EQUCATION SIPLE SUPPORT GYRE SUPPORT MARAD DATA TRANS MARAD MARITIME MARAD RANGING COMSAT C/L PROP DATA TRANS	VHF B/ION VHF NBS VHF NBS VHF ERAZIL SUPPORT STANFORD UNIV SIPLE SUPPORT STANFORD UNIV EVRE SUPPORT HARAD DATA TRANS HARAD	VHF B/ION SUPPORT NASA/WALLOPS 3 VHF NBS TIME/FREQ NAT BUR OF STDS 3 VHF BRAZIL EQUCATION STANFORD UNIV 3 SIPLE SUPPORT STANFORD UNIV 3 GYRE SUPPORT TEXAS AEM 3 MARAD DATA TRANS AII S MARAD HARITIME AII S MARAD RANBING AII S COMSAT C/L PROP WAVE PROP COMSAT LABS 5 MARAD DATA TRANS MARAD S	VHF B/ION VHF HBS TIME/FREQ NAT BUR OF STOS 3 W. HEMIS. VHF BRAZIL EQUCATION STANFORD UNIV 3 W. HEMIS. SIPLE SUPPORT STANFORD UNIV 3 W. HEMIS. GYRE SUPPORT TEXAS AEM 3 W. HEMIS. MARAD DATA TRANS AII MARAD MARAD	VHF B/ION SUPPORT NASA/WALLOPS 3 W. HEMIS. 3/71-9/71 VHF NBS TIME/FREQ NAT BUR OF STOS 3 W. HEMIS. 8/71-8/72 VHF BRAZIL EQUCATION STANFORD UNIV 3 W. HEMIS. 2/70- OPEN SIPLE SUPPORT STANFORD UNIV 3 W. HEMIS. 2/77- OPEN 6YRE SUPPORT TEXAS ACM 3 W. HEMIS. 2/77-10/78 MARAD DATA TRANS AII 5 W. HEMIS. 3/70-12/71 MARAD HARITIME AII 5 W. HEMIS. 3/70-12/71 MARAD RANGING AII 5 W. HEMIS. 3/70-12/71 COMSAT C/L PROP WAVE PROP COMSAT LABS 5 W. HEMIS. 3/70-12/71 MARAD DATA TRANS MARAD 5 W. HEMIS. 3/70-12/71

[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

3.7 Sorted by Chronology

IDA	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOL 06Y	HRS =
304	VHF OPN	TIME/FREQ	RADIO RES LABS	1	JAPAN	67- OPEN	154
185	WHF A/C	A/C COMM	ARINC	1	U.S.	1/67- 6/70	264
100	LAUNCH SUPPORT	SUPPORT	NASA	1	U-5.	1/67- 1/76	730
185	VHF A/C	A/C CONH	ARING	3	U.S.	1/67- 6/70	30 8
108	LAUNCH SUPPORT	SUPPORT '	NASA	3	U.S.	1/67- 6/76	369
100	LAUNCH SUPPORT	SUPPORT	NASA	5	U.S.	3/67-10/72	69
211	IDCS	HETEOR.	NOAA	3	U.S.	11/67-10/72	1050
211	IDCS	BAT PHOTOS	NOAA	3	U.S.	11/67-10/72	1050
107	SPEC SHF	SUPPORT	38	1	W. HEMIS.	68+ 70	1929
107	SPEC SHF	SUPPORT	52	3	W. HEMIS.	60 - 70	1613
239	VHF VANGUARD	CONFERENCE	USCE	1	ATLANTIC	6/68- 7/69	12
239	VHF VANGUARD	DATA TRANS	USCS	1	ATLANTIC	6/68- 7/69	12
239	VHF VANGUARD	CONFERENCE	USCE	3	ATLANTIC	6/60-10/74	28
534	WHF VANGUARD	DATA TRANS	USCG	3	ATLANTIC	6/68-10/74	28
232	VHF ESCS	A/C COMM	6648	1	W. HEMIS.	6/68-10/72	4.6
232	WHF ESEG	SUPPORT	E648	1	W. HEMIS.	6/68-10/72	48
220	VHF SE	DATA TRANS	GE	ì	BERMUDA	2/69- 8/71	41
220	VHF GE	MARITIME	38	Ĭ	BERHUDA	2/49- 8/71	41
228	VHF GE	RANGING	33	ì	BERHUDA	2/69- 6/71	41
228	VHF SE	DATA TRANS	GE .	3	BERNUDA	2/69- 6/71	142
228	VHF SE	HARITIME	SE	3	BERHUDA	2/69- 8/71	142
228	VHF SE	RANGING	38	3	BERMUDA	2/69- 8/71	142
210	HSSCC	DATA TRANS	NOAA	1	MORLD	3/69- 6/72	7
205	SSCC	DATA TRANS	NOAA	ī	WORLD	3/69- OPEN	8372
183	WEFAX	DATA TRANS	NOAA	ĭ	MORLD	3/69- OPEN	5957
210	MSSCC	METEOR.	NGAA	ī	HORLD	3/69- 6/72	7
205	SSCC	METEOR.	NOAA	ī	WORLD	3/69- OPEN	8372
183	MEFAX	METEGR.	NOAA	ī	HORLD	3/49- OPEN	5957
210	MSSGC	DATA TRANS	NOAA	3	HORLD	3/67- OPEN	26966
205	SSCC	DATA TRANS	NOAA	3	HORLD	3/67- OPEN	50
183	WEFAX	DATA TRANS	NOAA	3	HORLD	3/69- OPEN	3943
210	MSSCC	HETEOR.	NOAA	3	MORLD	. 3/69- OPEN	26966
205	SSCC	METEOR.	NOAA	3	WORLD	3/69- OPEN	20
183	WEFAX	METEOR.	NOAA	3	WORLD	3/69- OPEN	3943
202	S/C SUPPORT	SUPPORT	NASA	1	W. HEMIS.	4/49- 70	270
227	HET ALASKA	EDUCATION	ST. OF ALASKA	ī	ALASKA	6/69- OPEN	11314
227	HET ALASKA	MEDICAL	ST. OF ALASKA	ī	ALASKA	6/69- OPEN	11314
227	HET ALASKA	EDUCATION	NAT EDUC ASSOC	ī	W. HEMIS.	6/69- OPEN	11314
244	MMU REG 1	MAVE PROP	NASA/6SFC	5	N. AMERICA	8/69- 9/71	1866
245	MMU REG 2	WAVE PROP	NASA/GSFC	Š	No AMERICA	8/69- 9/71	326
234	SE/FAA	RANGING	38	1	N. ATLANTIC	11/69- 6/71	
234	SE/FAA	RANGING	39	3	N. ATLANTIC	11/69- 6/71	44
236	WHF BRAZIL	EDUCATION	STANFORD UNIV	3	W. HEMIS.	2/70- OPEN	38
249	MARAD	DATA YRANS	AII	5	W. HEMIS.	3/70-12/71	45
249	MARAD	MARITIME	AII	5	H. HEMIS.	3/70-12/71	65
249	MARAD	RANGING	AII	5	W. HEMIS.	3/70-12/71	65
249	HARAD	DATA TRANS	MARAD	5	W. HEMIS.	3/70-12/71	65
249	MARAD	MARITIME	MARAD	Š	W. HEMIS.	3/70-12/71	65
261	GE L-BAND	RANGING	SE	i	N. AMERICA	6/70-10/72	1
261	GE L-BAND	RANGING	ŠĒ.	3	N. AMERICA	6/70-10/72	51
261	GE L-BAND	RANGING	ĞĒ.	5	N. AMERICA	6/70- 6/73	152
247	ALPHA-2	RANGING	AII	Š	ATLANTIC	7/70- 2/71	88
247	ALPHA-2	RANGING	USAF/SAMSO	5	ATLANTIC	7/70- 2/71	1.0
226	VHF NETHERLAND	MARITIME	NETHERLANDS	-3	ATLANTIC	8/70-12/71	265
225	VHF ENGLAND	MARITIME	UNITED KINDSOM	3	ATLANTIC	8/70-12/70	191
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^{*} ATS SCHEDULED TIME/CTS ACTUAL TIME

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10-	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS .
231	VHF HSEN PROP	MAVE PROP	MSFN NETWORK	3	W. HEMIS.	9/70- 2/71	22
561	LOS ALAMOS	A/C COMM	E868	1	W. HEMIS.	10/70-10/71	265
522	VHF NOPUAY	METEOR.	NORWAY	3	N. ATLANTIC	11/70- 2/71	22
233	WHE NONHAY	RANGING	HORMAY	3	N. ATLANTIC	11/70- 2/71	22
257	SHF CRC	HAVE PROP	CANADA/CRC	1	CANADA	1/71-12/71	76
251	L-BAND DOT	RANGING	SCEING	ŝ	N. AMERICA	2/71- 7/74	557
250	L-BAND RANGING	RANGING	WESTINGHOUSE	ĩ	U.S. (WEST)	2/71- 5/71	72,
250	L-BAND RANGING	RANGING	MESTINGHOUSE	3	U.S. (WEST)	2/71- 5/71	ŏ
250	L-BAND RANGING	RANGING	WESTINGHOUSE	š	U.S. (VEST)	2/71- 8/71	77
284	VHF HIGH NOTE	RANGING	SANDIA/AEC	7	U.S.	3/71- 6/72	Š
234	VHF HIGH NOTE	RANGING	SANDIA/AEC	i	U-S.	3/71- 6/72	Š
230	VHF B/ION	SUPPORT	MAX PLANCK INST	- [W. HEHIS.	3/71- 9/71	176
230	VHF B/ION	SUPPORT	MASA/WALLOPS	ź	W. MEMIS.	3/71- 9/71	176
252	L-BAND FAA	RANGING	BOEINE	Š.	N. AMERICA	9/71- 9/72	275
252	L-BANO FAA	RANGING	FAA	5	N. AMERICA	4/71- 4/72	
246	SSRA	RANGING	VESTINGHOUSE	5	U.S. (WEST)		275
253		· · · · · · · · · · · · · · · · · · ·				4/71- 5/71	1
253	SHF VLBI	TIME/FREQ	SMITHSONIAN INS	1	u.s.	\$/71-10/72	
	SHF VLBI SHF VLBI	TIME/FREQ TIME/FREQ	SMITHSONIAN INS	3	U.S.	5/71-10/72	190
283		i in vita a distance	SMITHSONIAN INS	5	U-S-	5/71-10/72	0
285	VHF STANFORD	EDUCATION	STANFORD UNIV	j	U.S. (WEST)	5/71- 6/72	2
285	VHF STANFORD	EDUCATION	STANFORD UNIV	3	U-S- (WEST)	5/71- 6/72	139
531	VHF NGS	TIME/FRED	NAT BUR OF STOS	3	H. HEMIS.	8/71- 8/72	327
360	CRC C/L-BAND	HAVE PROP	CANADA	5	CANADA	9/71- 5/72	113
283	VHF UCLA	EDUCATION	TRU	3	U-S+(WEST)	9/71-10/73	15
263	WHE UCLA	EBUCATION	UCLA	3	U.S. (WEST)	9/71-10/71	15
202	VHF NLP	COMPUTER	LISTEN HILL	1	U-S-(N-V-)	10/71- OPEN	617
282	VHF NLM	MEDICAL	LISTER HILL	1	U-S-(N-W.)	10/71- OPEN	419
102	DATA XHISSION	MEDICAL	DUKE U. HED CEN	1	U-S-(EAST)	11/71-11/71	44
254	SHE SEARCH	LAW ENFORC	PUBLIC SYST INC	1	U.S.	12/71-12/71	ė.
305	VHF ALOHA	COMPUTER	U. OF HAWAII	1	PACIFIC	72- OPEN	1167
287	VHF SEEK	METEOR.	SIERRA RES CORP	3	U.S.	1/72-12/72	_7
259	COMSAT C/L PROP	MAVE PROP	COMSAT LABS	•	W. HEMIS.	1/72- 4/72	37
235	WHE HAVAII	EDUCATION	PEACESAT	1	PACIFIC	2/72= OPEN	6942
532	WHF HAWAII	MEDICAL	PEACESAT	1	PACIFIC	2/72- OPEN	6942
265	VANGUARD	DATA TRANS	USCS	3	ATLANTIC	3/72- 4/73	76
265	VANGUARD	RANGING	USCE	5	ATLANTIC	3/72- 4/73	232
265	VANGUARD	DATA TRANS	USCE	3	PACIFIC	3/72- 4/73	98
265	VANGUARD	RANGING	USCE	5	PACIFIC	3/72- 4/73	535
200	GE/HARAD	DATA TRANS	66	1	ATLANTIC	4/72- 5/72	7
288	GE/HARAD	MARITIME	38	1	ATLANTIC'	4/72- 5/72	7
200	GE/HARAD	RANGING	66	1	ATLANTIC	4/72- 5/72	7
288	SE/HARAD	DATA TRANS	GE 30	3	ATLANTIC	1/72- 5/72	46
288	SE/HARAD	MARITIME	GE	3	ATLANTIC	×/72- 5/72	**
200	GE/HARAD	RANGING	GE	3	ATLANTIC	4/72- 5/72	46
289	VHF CALYPSO	DATA TRANS	COUSTEAU BROUP	3	ANTARCTICA	6/72- 1/76	358
289	VHF CALYPSO	SUPPORT ,	COUSTEAU BROUP	3	ANTARCTICA	6/72- 1/76	358
263	TELESAT	HAVE PROP	TELESAT CANADA	1	CANADA	7/72- 7/72	136,
290	WHF BERING SEA	SUPPORT	US/USSR	1	BERING SEA	12/72- 3/73	43
294	SP HET	SUPPORT	HET	1	U.S.	1/73- 8/77	1654
294	SP HET	SUPPORT	HET	3	U.S.	1/73- 0/77	1918
264	HARAD/AII/PLACE	DATA TRANS	AII	3.	HORLD	1/73- GPEN	131
264	HARAD/AII/PLACE	HARITIME	AII	3	WORLD	1/73- OPEN	131
264	HARAD/AII/PLACE	DATA TRANS	AII	5	WORLD	1/73- OPEN	912
264	HARAD/AII/PLACE	MARITIME	AII	5	MORLD	1/73- OPER	912
264	MARAD/AII/PLACE	ranging	AII	5	WORLD	1/73- OPEN	912

[·] ATS SCHEDULED TIME/CTS ACTUAL TIME

IDë	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS .
291	VMF ZURITA	SUPPORT	AËC	1	ALASKA/HAW.	6/73-12/73	62
202	VHF CLIPPER	SUPPORT	MOODY COLLEGE	3	ATLANTIC	6/73- 8/77	342
292	VHF CLIPPER	SUPPORT	TEXAS ACH	Š	ATLANTIC	6/73- 6/77	342
342	GE/EXXON	DATA TRANS	GE & EXXON	1	ATLANTIC	7/73- 2/74	ΨĠ
293	6E/EXXON	MARITIME	SE & EXXON	1	ATLANTIC	7/73- 2/74	90
293	6E/EXXON	ransing	SE E EXXON	1	ATLANTIC	7/73- 2/74	₹ 0
292	NHE CLIPPER	SUPPORT	HOODY COLLEGE	1	ATLANTIC	7/730 8/77	
293	6E/EXXON	DATA TRANS	SE & EXXON	3	ATLANTIC	7/73- 2/74	186
293	SEZEXXON	Haritime	SE & EXXON	3	ATLANTIC	7/73- 2/74	186
5.67	SE/EXXON	RANGING	GE & EXXON	3	ATLANTIC	7/73- 2/74	186
295	VHF NIAID	HEDICAL	NIAIO	1	PACIFIC	10/73- OPEN	237
297	ANE DEBALLI	EDUCATION	U. SO. PACIFIC	1	PACIFIC	1/74- OPEN	2667
301	VHF BATE	SUPPORT	NOAA	3	UNKNOWN	1/74- 9/74	388
268	L-MAND TRILAT	RANGING	6 E	1	U.S.	1/74- 1/76	19
264	L-BAND TRILAT	RANGING	39	2	V.S.	1/74- 1/76	90,
264	L-BAND TRILAT	RANGING	GE	5	U.S.	1/74- 1/76	172
251	L-BAND DOT	DATA TRANS	BOEINE	3	N. AMERICA	4/74-10/76	178
300	VHF IHCHIS	MEDICAL	IHCHIS	j	ALASKA	5/74- 5/74	2
612	HET (ARC)	MEDICAL	INDIAN HLTH SER	•	ALASKA	6/74- 6/75	1741
612	HET (ARC)	EDUCATION	ST. OF ALASKA	•	ALASKA	6/74- 6/75	1741
612 612	HET (ARC)	EDUCATION	UANI	•	ALASKA/VASH	6/74- 6/75	7741
286	HET (ARC) HET (ARC)	MEDICAL	WAMI	2	ALASKA/WASH	6/74- 6/75	1741
612	HET (ARC)	EDUCATION	APP. REG. COMM.	3	APPALACHIA	6/74- OPEN	536
612	HET (ARC)	EDUCATION EDUCATION	APP. REG. COMM.	7	A PALACHIA	6/74- 6/75	7741
612	HET (ARC)	MEDICAL	VETERANS ADM	•	APPALACHIA	6/74- 6/75	1741
606	NADIG BEACON	WAVE PROP	NOAA	•	APPALACHIA	6/74- 6/75	1741
609	MMY	WAVE PROP	NAVAL RES LAB		EUROPE '	6/74- 7/79	0
607	HAV	WAVE PROP	WESTINGHOUSE	Ž.	MARYLAND Maryland	6/74- 7/79 6/74- 7/79	3271 3271
607	MMV	MAVE PROP	ARMY	Ž	NEW JERSEY	6/74- 7/79	3271
609	HHU	MAVE PROP	BELL LAB	7	NEW JERSEY	6/79- 7/79	3271
609	HHU	WAVE PROP	OHIO STATE U.	I	OHIO	6/79- 7/79	3271
612	HET (ARC)	EDUCATION	ROCKY MTN STS	7	ROCKY HINS	6/74- 6/75	1741
607	MMU	HAVE PROP	U. OF TEXAS	Ž	TEXAS	6/79- 7/79	3271
639	ALL DEMO	DEMO	NASA	I	U.S.	6/79- 7/79	322
602	VHRR RADIOMETER	METEOR.	NASA/GSFC	I	U.S.	6/79- 9/74	360
607	INDRAS	SAT CONTRL	NASA/6SFC .	Ĭ	U.S.	6/74- 7/75	5
610	INTERFEROMETER	SAT CONTRL	NASA/GSFC	_	U.S.	6/79-11/78	10a
604	SAPPSAC	SAT CONTRL	NASA/6SFC	6	U.S.	6/74- 1/75	72
632	ENV HEAS EXP	SCIENTIFIC	NASA/GSFC	6	U.S.	6/79- 7/77	ŚŌ
607	MMU	HAVE PROP	NASA/GSFC	6	U.S.	6/74-7/79	3271
601	RADIO FREG INT.	MAVE PROP	NASA/ESFC	6	U.S.	6/74-12/76	877
606	RADIO BEACON	WAVE PROP	NOAA	6.	U.S.	6/74- 7/79	Ò
654 -	COMSAT PROP US	HAVE PROP	CONSAT LABS	6	U.S. (EAST)	6/74- 6/78	159
601	MMW	HAVE PROP	COMSAT LABS	6	VIRGINIA	6/74- 7/79	3271
609	MMU	HAVE PROP	VIRGINIA POLY	6	VIRGINIA	6/74- 7/79	3271
609	MMW High	HAVE PROP	BATTELLE LAB	6	WASHINGTON	6/74- 7/79	3271
603	RAD ASTRO INTER	WAVE PROP	NASA/GSFC	6	HÖRLD	6/74- 6/75	9
664	SAR LEBAND C/O	Hanging	BOEING	6	N. ATLANTIC	8/74- 4/75	13
664	SAR L-BAND C/O	RANGING	FAA	6.	N. ATLANTIC	8/74- 4/75	13
246	SP L-BAND	CONFERENCE	AII	5	U.Š.	8/74- 4/75	135
248	SP L-BAND	DATA TRANS	AII	5	U.S.	8/74- 4/75	135
657	CRC	RANGINE	CANADA/CRC	6	CANADA	9/74- 8/77	138
605	PLACE	DATA TRANS	NASA	•	u.s.	9/74- 6/75	967
605	PLACE	RANGING	NA SA	5	U.S.	9/74- 6/75	967

[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

ID#	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS .
618	TRUST	DATA TRANS	NASA/GSFC	6	U.S.	9/74- 7/75	48
620	SEOS-C	DATA TRANS	NASA/65/C	6	WORLD:	9/74- 7/79	494
617	TORE	DATA TRANS	NASA/GSFC	6	HORLD	9/74- 7/79	622
620 .	SEOS-C	SAT CONTRL	NASA/GSFC	6	WORLD	9/74- 7/79	874
617	TORE	SAT CONTRL	NASA/6SFC .	•	WORLD	9/74- 7/79	622
648	APOLLO-SOYUZ	SUPPORT	NASA/HOUSTON	6	WORLD	10/74- 7/75	333
306	VHF DRAKE	SUPPORT	TEXAS AGM	3	ANTARCTICA	1/75- OPEN	428
671	MSH	HEDICAL	HTN STS HTH COR	Ğ.	ROCKY HTNS	3/75- 5/75	22
649	MAG FIELD STUDY	SCIENTIFIC	NASA/GSFC	•	U.S.	4/75- 6/75	295
650	HAG DATA	SCIENTIFIC	UCLA	Ā	U.S.	5/75= 8/76	903
608	PROPAGATION(E)	MAYE PROP	ESTEC	ě	EUROPE	8/75-10/76	2263
647		BROADCAST	INDIA	6	INDIA	8/75- 8/76	2171
647	SITE	ECUCATION	INDIA	6	INDIA	8/75= 8/76	2171
302	NEA	EDUCATION	NAT EDUC ASSOC	1	APPAL/ALASK	1/76- 4/77	39
302	NEA	EDUCATION	NAT EDUC ASSOC	3	APPAL/ALASK	1/76= 4/77	76
331	PLU	BROADCAST	PROJECT LOOK-UP	3	PUERTO RICO	1/76- OPEN	87
331	PLU	EDUCATION	PROJECT LOOK-UP	3	PUERTO RICO	1/76- OPEN	87
660	PLU	BROADCAST	PROJECT LOOK-UP	ĕ	SO. AMERICA	1/76- 7/79	141
660	PLU	EDUCATION	PROJECT LOOK-UP	6	SO. AMERICA	1/76- 7/79	141
CTS-T	TZP/SHF	GRD TERM	NASA/LERG	CTS	OHIO	2/76- OPEN	839
CTS-01	COMM LINK CHAR	MAVE PROP	OHIO STATE U	CTS	OHIO	2/76-12/77	315
CTS-01	COMM LINK CHAR	MAVE PROP	U. OF TEXAS	CTS	TEXAS	2/76-12/77	315
CTS-01	COMM LINK CHAR	HAVE PROP	NASA/GSFC	CTS	U.S.	2/76-12/77	315
CT5-06	TET/COMSAT	GRD TERM	COMSAT LABS	CTS	U.S. (EAST)	2/76- OPEN	266
CTS-15	TELECONFERENCE	CONFERENCE	WESTINGHOUSE	CTS	U.S.(EAST)	2/76- OPEN	286
CTS-04	COLLEGE CURR	EDUCATION	CARLETON UNIV	CTS	U.S./CANADA	2/76- OPEN	446
CTS-04	COLLEGE CURR	EDUCATION	STANFORD UNIV	CTS	U.S./CANADA	2/76- OPEN	446
CTS-01	COMM LINK CHAR	MAVE PROP	VIRGINIA POLY	CTS	VIRGINIA	2/76-12/77	315
309	NSF	SUPPORT	TEXAS AGH	3	ATLANTIC	3/76- 9/76	161
CTS-16	PROJ INTERCHS	EDUCATION	ARCH OF S.F.	CTS	CALIFORNIA	3/76- 6/78	45
638	COMSAT PROP IND	MAVE PROP	COMSAT LABS		EUROPE	3/76- 7/76	667
CTS-20	ADV GRD REC EQ	SRD TERM	NASA/GSFC	CTS	U.S.	4/76- 4/78	87
310	VHF DEA	CONFERENCE	DRUG ENF AGY	3	U.S.	4/76- OPEN	131
310	VHF DEA	RANGING	DRUG ENF AGY	3	U.S.	4/76- OPEN	131
310	VHF DEA	CONFERENCE	GE	3	U.S.	4/76- OPEN	131
310	VHF DEA	RANGING	GE	3	U.S.	4/76- OPEN	131
CTS-18	INTRANASA COMM	CONFERENCE	NA SA/ARC	CTS	U.S.	5/76- OPEN	382
CTS-18	INTRANASA COMM	CONFERENCE	NA SA / GSFC	CTS	U.S.	5/76- OPEN	382 .
CTS-18	INTRANASA COMM	CONFERENCE	NA SA/LERG	CTS	U.S.	5/76- OPEN	382
CTS-24	DICE	DATA TRANS	COMSAT LABS	CTS	U.S. (EAST)	5/76- OPEN	131
32.2	ALC	CONFERENCE	AMER LUTHERAN C	1	U.S.	6/76- OPEN	219
315	EROA	DATA TRANS	ERDA	3	PACIFIC	7/76- 8/76	5
315	ERDA	SUPPORT	ERDA	3	PACIFIC	7/76- 8/76	5
311	65FC	DENO	NASA/GSFC	3	U.S.(EAST)	7/76- GPEN	1705
CTS-22	ICE FLOW	DATA TRANS	NA SA/LERC	CTS	ALASKA	8/76- 9/76	70
623	L-BAND EXP	HAVE PROP	U. OF PA	6	U.S. (EAST)	8/76- 1/77	787
317	LAMONT	SUPPORT	LAMONT/DOHERTY	3	SO. OCEAN	10/76- 3/77	161
316	MSTL	MEDICAL	NAT SP TECH LAB	3	U.S. (SOUTH)	10/76-10/76	71
316	USTL	MEDICAL	SO REQ MED CONS	3	U.S. (SOUTH)	10/76-10/76	71
318	ORI	DATA TRANS	DESERT RES INST	ī	ANTARCTICA	12/76- 1/77	10
318	ORI	HETEOR.	DESERT RES INST	ī	ANTARCTICA	12/76- 1/77	10
318	DRI	DATA TRANS	DESERT RES INST	3	ANTARCTICA	12/76- 1/77	627
318	DRI	METEOR.	DESERT RES INST	3	ANTARCTICA	12/76- 1/77	627
319	SIRIUS	RANGING	BAKER DEV CORP	3	BERMUDA	12/76- 1/77	40
319	SIRIUS	SUPPORT	BAKER DEV CORP	3	BERMUDA	12/76- 1/77	40
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[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

IDa	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS	ţ)
CTS-19	SAY. DIST.	DATA TRANS	SECA	CTS	U-S-(50UTH)	12/76- OPEN	655	
523	SHF VLBI	TIME/FREQ	RADIO RES LABS	1	JAPAN	1/77- 2/77	5	
253	SHF VLBI	TIME/FREG	RADIO RES LAGS	Ž.	JAPAN	1/77- 2/77	190	
322	MHOI	SUPPORT	WOODS HOLE INST	3	PAGIFIC	1/77- 2/77	244	
350	SAMOA	EDUCATION	U. SO. PACIFIC	1	SAMOA	1/77- OPEN	258	
357	FLTAC	CONFERENCE	DEPT OF NAVY	3	W. HEMIS.	1/77- OPEN	341	
CTS-21	PSSC	DENO	PSSC	CTS	u.s.	2/77- OPEN	284	
CTS-21	PSSC	SUPPORT	PSSC	CTS	U.S.	2/77- OPEN	254	
324	SIPLE	SUPPORT	STANFORD UNIV	3	W. HEMIS.	2/77- OPEN	1166	
CTS-13	DECENT MED ED	EDUCATION	U OF WASHINGTON	CTS	ALASHA/WASH	3/77- OPEN	292	
CTS-13	DECENT HED ED	EDUCATION	VANI	CTS	ALASKA/WASH	3/77- OPEN	292	
CTS-13	DECENT HED ED	MEDICAL	WANI '	CTS	ALASKA/VASH	3/77- OPEN	272	
CTS-25	CONGRESS	CONFERENCE	GEO WASH UNIV	CTS	MARYLAND	4/77- 8/78	39	
325	SYRE	SUPPORT	TEXAS AEM	3	W. HEMIS.	4/77-10/70	. 315	
354	NORPAX	SUPPORT	U. OF CAL/NAVY	ī	N. PACIFIC	5/77- 6/77	53	
335	VHF SAR SIM	RANGING	BAKER DEV CORP	5	BERMUDA	6/77- 9/77	15	
330	HONTANA	SUPPORT	ST. OF MONTANA	3	MONTANA	6/77-11/77	163	
CTS-07	BIONED COMMUN	EDUCATION	LISTER HILL	CTS	U-S.	-6/77- OPEN	404	
CTS-07	BIONED COMMUN	MEDICAL Data trans	LISTER HILL	CTS	U-S-	6/77- OPEN	404	
CTS-24 CTS-11	DICE Health/Commun	EDUCATION	NASA/LERC VETERANS ADM	CTS	U.S. (EAST)	6/77- OPEN	131	
CTS-11	HEALTH/COMMUN	MEDICAL	VETERANS ADM	CTS	U.S.(WEST)	6/77- OPEN	30 é	
335	ENDEAVOR	SUPPORT	U. OF RHODE ISL	3	ATLANTIC	7/77- 1/78	7 Q B	
111	MOTOROLA	MAVE PROP	MOTOROLA	I	U-S-	7/77- 9/78	47	
104	LAUNCH SUPPORT	SUPPORT	NASA	I	U.S.	7/77- 2/70	77	
661	ALFE	BROADCAST	PSSC	Ĭ	ALASKA	9/77-10/78	1979	
661	ALFE	DATA TRANS	FSSC	T :	ALASKA	9/77-10/78	1979	
667	ALVA	EDUCATION	PSSC .	_	ALASKA	9/77- 7/79	69	
467	ĀLVĀ	MEDICAL	PSSC	Ī	ALASKA	9/77- 7/79	69	
670	TEAN	EDUCATION	MONTANA ST U	6	HONTANA	9/77- 7/79	2	
340	SAMOA TV SAMPE	BROADCAST	PSSC	1	SANDA	9/77- OPEN	5 Š	
340	SAHOA TV SAMPE	BROADCAST	PSSC	3	SAMOA	9/77- OPEN	76	
672	SANFE	BROADCAST	PSSC	6	SANDA	9/77- 2/78	444	
666	UHF/NRL	SCIENTIFIC	NAVAL RES LAB	6	U-S-	9/77- 5/78	18	
667	ALVA	EDUCATION	PSSC	6	U.S.(VEST)	7/77- 7/79	69	
567	ALVA	MEDICAL	PSSC	6	U.S.(WEST)	9/77- 7/79	69	
CTS-26	PROJ ADJUNCT	CONFERENCE	SAT BUS SYSTEMS	CTS	VIRGINIA	9/77- 2/78	178	
CTS-26	TONULDA LORG	DATA TRANS	SAT BUS SYSTEMS	CTS	VIRGINIA	9/77- 2/78	178	
226	ERDA/DOD	SUPPORT	ERDA	1	ENEWETAK	10/77- 9/78	49	
CTS-09	SALINET	EDUCATION	SALINET	CTS	U.S.	10/77- 4/78	10	
307	WHF OCEAN	SUPPORT	U. OF HIAMI	3	ATLANTIC	12/77- OPEN	2241	
334	DISP	CONFERENCE	DEPT OF INTER	Ţ	PACIFIC	12/77- OPEN	1453	
674	SE L-BAND	RANGING	EE	6	U.S. (EAST)	12/77- 7/79	573	
674	SE L-BAND	SUPPORT	GE	, •	U.S.(EAST)	12/77- 7/79	573	
673	NIE	EDUCATION	APP. REG. CONN.	•	APPALACHIA	1/78- 7/79	3	
333	U. OF W. INDIES	EDUCATION	DEPT OF ST/AID	3	JAMAICA	1/78- 6/78	223	
315	ERUA	SUPPORT	ERDA	1	PACIFIC	1/78- 1/79	340	
315 CTS-30	ERDA Ter of Tomorrow	GRO TERM	ERDA FCG	1 CTS	PACIFIC U.S.	1/78- 1/79 3/78-12/78	146 56	
CTS-29	UNIV GRAD STUDY	EDUCATION	VARIAN ASSOC	CTS	U.S.	5/78-12/78	49	
CTS-28	VLSI	TIME/FREQ	UNIV OF ILL	CTS	U.S./CANADA	5/78-12/78	120	
342	PERU	SUPPORT	ADVENTURES UNL.	3	PERU	6/78- 7/78	46	
343	ORANGE	SUPPORT	NAT. SC. FOUND.	3	ANTARCTICA	7/78- 8/78	176	
344	BARBADOS	MEDICAL	DEPT OF ST/AID	3	BARBADOS	8/78- 9/78	14	
677	IHS	COMPUTER	INDIAN HLTH SER	6	ALASKA	9/78- 7/79	Ö	
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⁻ ATS SCHEDULED TIME/CTS ACTUAL TIME

ID.	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS +
677	INŠ."	CONFERENCE	INDIAN HLTH SER	6	ALASKA	9/78- 7/79	0
677	IHS	HEDICAL	INDIAN HLTH SER	6	ALASKA	9/78- 7/79	0
663	U. OF W. INDIES	BROADCAST	DEPT OF ST/AID	6	WEST INDIES	10/78- 7/79	66
663	U. OF W. INDIES	EDUCATION	DEPT OF ST/AID	6	WEST INDIES	10/78- 7/79	44
CTS-33	WIDE BAND COMM.	CONFERENCE	GTE LABS	CTS	U.S.	1/79- OPEN	•
CT5-31	3 WAY TIME TRAN	TIME/FREQ	U.S. NAVAL OBS.	CTS	U.S./CANADA	1/79- 7/79	d
CTS#35	CT SCANNING NET	MEDICAL	U. OF COLORADO	CTS	U.S. (MEST)	4/79- 7/79	Ö
CTS-12	AESP II	EDUCATION	APP. REG. CUMM.	CTS	APPALACHIA	PENDING	0
CTS-17	HEALTH ED TV	EDUCATION	ASSOC OF W HOSP	CTS	ROCKY HTHS	PENDING	0
CTS-17	HEALTH ED TV	HEDICAL	ASSOC OF W HUSP	CTS	ROCKY HTNS	PENDING	. 0
CTS-27	WOMENS SAT SER	CONFERENCE	NAT WOMENS AS	CTS	U.S.	PENDING	0

. ATS SCHEDULED TIME/CTS ACTUAL TIME

3.8 Sorted by Hours

ID:	EXP. NAME	CAT "	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS .
210	MSSCC ,	DATA TRANS	NOAA	3	MORLD	3/69- OPEN	26966
210	HSSCC	HETEOR.	NOAA	3	WORLD	3/49- OPEN	26966
227	HET ALASKA	EDUCATION	ST. OF ALASKA	1	ALASKA	6/49- OPEN	11314
227	HET ALASKA	MEDICAL	ST. OF ALASKA	1	ALASKA	6/69- OPEN	11314
227	HET ALASKA	EDUCATION	NAT EDUC ASSOC	1	W. HENIS.	6/69- OPEN	11314
205	22CC	DATA TRANS	NOAA	1	HORLD	3/49- OPEN	8372
205	\$5CC	METEOR.	NOAA	1	MORLD	3/47- OPEN	8372
235	VHF HAWAII	EDUCATION	PEACESAT	1	PACIFIC	2/72- OPEN	6942
235	VHF HABAII	MEDICAL	PEACESAT	. 1	PACIFIC	2/72- OPEN	6942
183	HEFAX	DATA TRANS	NOAA '	1	HORLD	3/69- OPEN	5957
183	HEFAX	HETEOR.	NOAA	1	WORLD	3/69- OPEN	5957
183	WEFAX	DATA TRANS	NOAA	3	MORLD	3/69- OPEN	3943
183	WEFAX	HETEOR.	NOAA	3	MORLD	3/69- OPEN	3943
609	MAU	WAVE PROP	NAVAL RES LAB	•	MARYLAND	6/74-7/79	3271
609	NMU	WAVE PROP	VESTINGHOUSE	6	MARYLAND	6/74- 7/79	3271
609	MMW	HAVE PROP	ARMY	•	NEW JERSEY	6/74- 7/79	3271
609	MMU	WAVE PROP	BELL LAB	•	NEW JERSEY	6/74- 7/79	3271
609	MMW	HAVE PROP	OHIO STATE U.	•	OHIO	6/74- 7/79	3271
6,09	MMM	HAVE PROP	U. OF TEXAS	•	TEXAS	6/74- 7/79	3271
607	MMA	HAVE PROP	NASA/GSFC	6	U.S.	6/74-7/79	3271
609	MMW	HAVE PROP	CONSAT LABS	•	YIRGINIA	6/74- 7/79	3271
609	MMM	MAVE PROP	VIRGINIA POLY	•	VIRGINIA	6/74- 7/79	3271
609	MMU	MAVE PROP	BATTELLE LAB		WASHINGTON	6/74- 7/79	3271
297	VHF USP/FIJI	EDUCATION	U. SO. PACIFIC	1	PACIFIC	1/74- OPEN	2667
508 307	PROPAGATION(E) VMF OCEAN	MAVE PROP	ESTEC	•	EUROPE	8/75-10/76	2263
647	SITE		U. OF HIAMI India	3	<u>atlantic</u> India	12/77- OPEN	2241 2171
647	SITE	BROADCAST EDUCATION	INDIA	7	INDIA	8/75- 8/76 8/75- 8/76	2171
661	ALFE	BROADCAST	PSSC	ī	ALASKA	9/77-10/78	1979
661	ALFE	DATA TRANS	PSSC	-	ALASKA	9/77-10/78	1979
107	SPEC SHF	SUPPORT	6E	ĭ	W. HEHIS.	48- 70	1929
294	SP HET	SUPPORT	HET	3	U.S.	1/73- 8/77	1918
244	MMW REG 1	MAVE PROP	NASA/GSFC	5	N. AMERICA	8/69- 9/71	1866
612	HET (ARC)	MEDICAL	INDIAN HLTH SER	6	ALASKA	6/74- 6/75	1741
612	HET (ARC)	EDUCATION	ST. OF ALASKA	6	ALASKA	6/74- 6/75	1741
612	HET (ARC)	EDUCATION	IMANI	6	ALASKA/WASH	6/74= 6/75	1741
612	HET (ARC)	HEDICAL	HAMI	.6.	ALASKA/VASH	6/74- 6/75	1741
612	HET (ARC)	EDUCATION	APP. REG. COHM.	6	APPALACHIA	6/74- 6/75	1741
612	HET (ARC)	EDUCATION	VETERANS ADM	(i)	APPALACHIA	6/74- 6/75	1741
612	HET (ARC)	MEDICAL	VETERANS ADM	🍎	APPALACHIA	6/74- 6/75	1741
612	HET (ARC)	EDUCATION	ROCKY HTN STS	6	ROCKY HTNS	6/74- 6/75	1741
311	BSFC	DENO	NASA/GSFC	3	U.S. (EAST)	7/76- OPEN	1705
294	SP HET	SUPPORT	HET	1.	U.S.	1/73- 4/77	1654
107	SPEC SHF	SUPPORT	GE	3	W. HEHIS.	68- 70	1613
338	DISP	CONFERENCE	DEPT OF INTER	1	PACIFIC	12/77- OPEN	1453
305	VHF ALOHA	COMPUTER	U. OF HAWAII	1	PACIFIC	72- OPEN	1167
324	SIPLE	SUPPORT	STANFORD UNIV	3	W. HENIS.	2/77- OPEN	1166
211	IDCS	METEOR.	NOAA	3	u.s.	11/67-10/72	1050
211	IDCS	SAT PHOTOS	NOAA	3	U.S.	11/67-10/72	1050
605	PLACE	DATA TRANS	NASA	•	U.S.	9/74- 6/75	967
605	PLACE	RANGING	NASA	•	U.S.	9/74-6/75	967
104	LAUNCH SUPPORT	SUPPORT	NASA	1	U.S.	1/67- 1/76	930
264	MARAD/AII/PLACE	DATA TRANS	AII	5	MORLD	1/73- OPEN	912
264	MARAD/AII/PLACE MARAD/AII/PLACE	RANGING	AII	5	WORLD	1/73- OPEN 1/73- OPEN	912
6.07	HARRY ALLIFEACE	4 4 4 4 4 4 4 4	AII	7	MORLO	ATTO OPEN	912

⁻ ATS SCHEDULED TIME/CTS ACTUAL TIME

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IDS	EXP. NAME	CAT,	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS	1
450	MAG DATA	SCIENTIFIC	UCLA	. 6	U.S.	5/75- 6/76	903	
620	GEOS-C	DATA TRANS	NASA/BSFC	ě	MORLD	9/74- 7/79	194	
425	GE05-C	SAT CONTRL	NASA/GSFC	. 6	WORLD	9/74- 7/79	874	
401	RADIO FREG INT.	WAVE PROP	NASA/GSFC	•	U.S.	6/74-12/76	877	
CTS-T	TEP/SHF	GRO TERM	NASA/LERC	CTS.	OHIO	2/76- OPEN	839	
623	L-BAND EXP	HAVE PROP	U- OF PA	•	U.S.(EAST)	0/76- 1/77	787	
638	CONSAT PROP IND	WAVE PROP	CONSAT LABS		EUROPE	3/76- 7/76	667	
CTS-19	SAT. DIST.	DATA TRANS	SECA	CTS	U.S. (SOUTH)	12/76- OPEN	455	
276	DRI	DATA TRANS	DESERT RES INST	3	ANTARCTICA	12/76- 1/77	627	
210	DRI	NETEOR.	DESERT RES INST	3	ANTARCTICA	12/76- 1/77	627	
617	TORE	DATA TRANS	NASA/BSFC	. 6	WOKLD	9/74- 7/79	622	
617	TORE	SAT CONTRL	NASA/GSFC	•	HORLD	9/74- 7/79	422	
202	VHF NLP	COMPUTER	LISTER HILL	1	U+\$ - (N. H .)	10/71- OPEN	617	
282	VHF NLM	MEDICAL	LISTER HILL	1	·U-S-(N-H-)	10/71- OPEN	617	
674	GE L-BAND	RANGING	6£	6	U.S.(EAST)	12/77- 7/79	573	
674	SE L-BAND	SUPPORT	GE	6	U.S. (EAST)	12/77- 7/79	573	
527	L-BAND DOT	ranging	· BOEING	5	N. AMERICA	2/71- 7/74	557	
286	HET (ARC)	EDUCATION	APP. RES. COMM.	3	APPALACHIA	6/74- OPEN	536	
CTS-04	COLLEGE CURR	EDUCATION	CARLETON UNIV	CTS	U.S./CANADA	2/76- OPEN	446	
CTS-04	COLLEGE CURR	EDUCATION	STANFORD UNIV	CTS	U-S-/CANADA	2/76- OPEN	446	
672	SAMFE	BROADCAST	PSSC	6	SAHOA	9/77- 2/78	444	
200	VHF DRAKE	SUPPORT	TEXAS ACH	3	ANTARCTICA	1/75- OPEN	428	
CTS-07	BIONED COMMUN	EDUCATION	LISTER HILL	CTS	U.S.	6/77- OPEN	404	
CTS-07	BIOMED COMMUN	Nedical	LISTER HILL	CTS	U.S.	6/77- OPEN	404	
357	FLTAC	CONFERENCE	DEPT OF NAVY	3 :	W. HEMIS.	1/77- OPEN	391	
301:	VHF GATE	SUPPORT	NOAA	3	UNKNOWN	1/79- 9/74	388	
CTS-18	INTRANASA COMM	CONFERENCE	NASA/ARC	CTS	U.S.	5/76- OPEN	382	
CTS-18	INTRANASA COMM	CONFERENCE	NA SA/GSFC	CTS	U.S.	5/76- OPEN	362	
CTS-18	INTRANASA COMM	CONFERENCE	NASA/LERC	CTS	U-S-	5/76- OPEN	205	
108	LAUNCH'SUPPORT	SUPPORT	NA SA	3	U.S.	1/67- 8/76	369	
602	WHRR RADIOMETER	HFTEOR.	NASA/GSFC	6	U.S.	6/79- 9/74	360	
287	VHF CALYPSO	TA TRANS	COUSTEAU GROUP	3	ANTARCTICA	6/72- 1/76	350	
26.9	VHF CALYPSO	SUPPORT	COUSTEAU GROUP	3	ANTARCTICA	6/72- 1/76	354	
292	VHF GLIPPER	SUPPORT	HOODY COLLEGE	3	ATLANTIC	6/73- 8/77	342	
292	ANE CLIPPER	SUPPORT	TEXAS AEM	3	ATLANTIC	6/73- 8/77	342	
640	APOLLO-SOYUZ	SUPPORT	NASA/HOUSTON	. •	HORLD	10/74- 7/75	333	
528	VHF NBS	TIME/FREQ	NAT BUR OF STDS	3	W. HEMIS.	8/71- 8/72	327	
245	MNW REG Z	HAVE PROP	NASA/GSFC	5	N. AMERICA	8/69- 9/71	25.6	
639	ALL DENO	DENO	NASA	6	U.S.	6/79- 7/79	322	
CTS-01	COMM LINK CHAR	MAVE PROP	U STATE U	CTS	OHIO	2/76-12/77	315	
CTS-01	COMM LINK CHAR	HAVE PROP	U. OF TEXAS	CTS	TEXAS	2/76-12/77	315	
CTS-01	COMM LINK CHAR	WAVE PROP	NASA/ESFC	CTS	U.S.	2/76-12/77	315	
CTS-01	COMM LINK CHAR	HAVE PROP	VIRGINIA POLY	CTS	Virginia	2/76-12/77	315	
325	GYRE	SUPPORT	TEXAS AEM	3	W. HEMIS.	4/77-10/78	315	
185	VHF A/C	A/C COMM	ARINC	3	U.S.	1/67- 6/70	30 a	
CTS-11	HEALTH/CONNUN	EDUCATION	VETERANS ADM	CTS	U.S. (VEST)	6/77- OPEN	306	
CTS-11	HEALTH/CORMUN	HEDICAL	VETERANS ADM	CTS	U.S. (WEST)	6/77- OPEN	20.6	
449	HAG FIELD STUDY	SCIENTIFIC	NASA/GSFC	•	U.S.	4/75- 6/75	295	
C75-13	DECENT HED ED	EDUCATION	U OF WASHINGTON	CTS	ALASKA/VASH	3/77- OPEN	292	
CTS-13	DECENT HED ED	EDUCATION	INAMI	CTS	ALASKA/WASH	3/77- OPEN	292	
CTS-13	DECENT HED ED	MEDICAL	VANI	CTS	ALASKA/WASH	3/77- OPEN	292	
CTS-15	TELECONFERENCE	CONFERENCE	WESTINGHOUSE	CTS	U.S. (EAST)	2/76- OPEN	286	
CTS-21	PSSC	DENO	PSSC	CTS	U.S.	2/77- OPEN	284	
CTS-21	PSSC	SUPPORT	PSSC	CTS	U.S.	2/77- OPEN	204	
252	L-BAND FAA	ranging	BOEING	5	No AMERICA	4/71- 4/72	275	

[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

IDe	EXP. NAME	CAT,	EXPERIMENTED	SAT	LOCATION	CHRONOLOGY	HRS
252	L-BAND FAA	RANGING	FAA	5	N. AMERICA	4/71- 4/72	275
202	S/C SUPPORT	SUPPORT	NASA	ì	W. HEMIS.	4/49- 70	270
CTS-06	TET/COMSAT	GRO TERM	COMSAT LABS	ČTS!	U.S. (EAST)	2/76- OPEN	266
226	VHF NETHERLAND	MARITIME	NETHERLANDS	3	ATLANTIC	8/70-12/71	265
201	LOS ALAHOS	A/C CONH	EGLG	1	W. HEMIS.	10/70-10/71	265
145	VHF A/C	A/C COMM	ARINC	1	U.S.	1/67- 6/70	264
250	SAMOA	EDUCATION	U. SO. PACIFIC	1	SAMOA	1/77- OPEN	258
322	MHOI	SUPPORT	WOODS HOLE INST	3	PACIFIC	1/77- 2/77	244
295	VHF NIAID	MEDICAL	NIAID	1	PACIFIC	10/73- OPEN	237
265	VANGUARD	ranging	USCE	5	ATLANTIC	3/72- 4/73	232
265	VANGUARD	ranging	USCG	5	PACIFIC	3/72- 4/73	232
333	U. OF W. INDIES	EDUCATION	DEPT OF ST/AID	3	JAMAICA	1/78- 6/78	223
312	ALC	CONFERENCE	AMER LUTHERAN C	1	U-5-	6/76- OPEN	219
225	VHF ENGLAND	MARITIME	UNITED KINDGOM	. 3	ATLANTIC	8/70-12/70	191
253	SHE VLBI	TIME/FREQ	SHITHSONIAN INS	3	U.S.	5/71-10/72	190
253	SHF VLBI	TIME/FREQ	RADIO RES LABS	3 .	JAPAN	1/77- 2/77	190
293	GE/EXXON	DATA TRANS	SE & EXXON	3	ATLANTIC	7/73- 2/74	186
293	GE/EXXON	HARITIME	GE & EXXON	2	ATLANTIC	7/73- 2/74	186
293	GE/EXXON	RANGING	GE & EXXON	3	ATLANTIC	7/73- 2/74	186
CTS-26	PROJ ADJUNCT	CONFERENCE	SAT BUS SYSTEMS	CTS	VIRGINIA	9/77- 2/78	178
CTS-26 230	PROJ ADJUNCT	DATA TRANS	SAT BUS SYSTEMS	CTS	VIRGINIA	9/77- 2/78	178
230	VHF B/ION VHF B/ION	SUPPORT	MAX PLANCK INST	3	H. HEMIS.	3/71- 9/71	176
343	ORANGE	SUPPORT	NASA/VALLOPS	2	W. HEMIS.	3/71- 9/71	176
268	L-BAND TRILAT	SUPPORT	NAT. SC. FOUND.	3	ANTARCTICA	7/78- 8/78	176
332	ENDEAVOR	RANGING Support		5	U.S.	1/74- 1/76	172
330	MONTANA	SUPPORT	U. OF RHODE ISL St. of Montana	3	ATLANTIC	7/77- 1/78	168
309	NSF	SUPPORT	TEXAS ASH	3	MONTANA	6/77-11/77	163
217	LAMONT	SUPPORT	LAMONT/DOHERTY	3	ATLANTIC	3/76= 9/76	161
658	COMSAT PROP US	WAVE PROP	COMSAT LABS	3	SO. OCEAN U.S.(EAST)	10/76- 3/77	161 159
304	VHF OPN	TIME/FREQ	RADIO RES LABS		JAPAN	67- OPEN	154
261	GE L-BAND	MANGING	GE .	Ė	N. AMERICA	6/70- 6/73	152
315	ERDA	DATA TRANS	ERDA	í	PACIFIC	1/78- 1/79	146
315	ERDA	SUPPORT	ERDA	i	PACIFIC	1/78- 1/79	146
228	VHF GE	DATA TRANS	6E	3	BERMUDA	2/69- 8/71	142
228	VHF GE	HARITIME	6E	3	BERMUDA	2/69- 8/71	142
228	VHF BE	RANGING	GE	3	BERMUDA	2/69- 8/71	142
66C	PLU	BROADCAST	PROJECT LOOK-UP	4	SO. AMERICA	1/76- 7/79	191
660	PĹŪ	EDUCATION	PROJECT LOOK-UP		SO.AMERICA	1/76- 7/79	141
285	VHF STANFORD	EDUCATION	STANFORD UNIV	3	U.S. (NEST)	5/71- 6/72	139
657	CRC	RANGING	CANADA/CRC	4	CANADA	9/74- 8/77	136
263	TELESAT	MAVE PROP	TELESAT CANADA	1	CANADA	9/72- 9/72	136
248	SP L-BAND	CONFERENCE	AII	5	U.S.	8/74- 4/75	135
248	SP L-BAND	DATA TRANS	AII	5	U.S.	8/74- 4/75	135
264	HARAD/AII/PLACE	DATA TRANS	AII	3	WORLD	1/73- OPEN	131
264	MARAD/AII/PLACE	MARITIME	AII	3	WORLD	1/73- OPEN	131
316	VHF DEA	CONFERENCE	DRUG ENF AGY	3	u.S.	4/76 - OPEN	131
310	VHF DEA	RANGING	DRUG ENF AGY	3	U.S.	4/76- OPEN	131
310	VHF DEA	CONFERENCE	ĞĒ	3	U.S.	4/76- OPEN	131
310	VHF DEA	RANGING	GE	3	.U.S.	4/76- OPEN	131
CTS-24	DICE	DATA TRANS	COMSAT LABS	CTS	U.S. (EAST)	5/76- OPEN	131
CT5-24	DICE	DATA TRANS	NA SA/LERC	CTS	U.S. (EAST)	6/77- OPEN	131
251	L-BAND DOT	DATA TRANS	BOEING	3	N. AMERICA	4/74-10/76	120
CTS-28	VLBI	TIME/FREQ	UNIV OF ILL	CTS	U.S./CANADA	5/78-12/78	120
260	CRC C/L-BAND	HAVE PROP	CANADA	5 ,	CANADA	9/71- 5/72	113

⁻ ATT SCHEDULED TIME/CTS ACTUAL TIME

IDA	EXP. NAME	CAT	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS	•
610	INTERFEROMETER	SAT CONTRL	NASA/GSFC	6	U.S.	6/74-11/78	104	
250	L-BAND RANGING	RANGING	WE'STINGHOUSE	5	U.S.(WEST)	2/71- 5/71	79	
265	VANGUARD	DATA TRANS	USCG	. 3	ATLANTIC	3/72- 4/73	78	
265	VANGUARD	DATA TRANS	USCG	3	PACIFIC	3/72- 4/73	98	
268	L=BAND TRILAT	RANGING	6E	3	U.S.	1/79= 1/76	98	
34C	SAMOA TV SAMPE	BROADCAST	PSSC	3	SANDA	9/77- OPEN	76	
293	GE/EXXON	DATA TRANS	BE & EXXON	1	ATLANTIC	7/73- 2/74	90	
293	6E/EXXON	MARITIME	SE & EXXON	1	ATLANTIC	7/73- 2/74	90	
293	6E/EXXON	RANGING	GE & EXXON	1	ATLANTIC	7/73- 2/74	90	
247	ALPHA-2	RANGING	AII	.5	ATLANTIC	7/70- 2/71	6.6	
247	ALPHA-2	RANGING	USAF/SAHSO	5	ATLANTIC	7/70- 2/71	8.8	
331	PLU	BROADCAST	PROJECT LOOK-UP	3	PUERTO RICO	1/76- OPEN	67	
331	PLU	EDUCATION	PROJECT LOOK-UP	3	PUERTO RICO	1/76- OPEN	87	
CTS-20	ADV GRO REC EQ	SAD TERM	NASA/GSFC .	CTS	U.S.	4/76- 4/78		
257	SHF CRC	MAVE PROP	CANADA/CRC '	1	CANADA	1/71-12/71	76	
302	NEA	EDUCATION	NAT EDUC ASSOC	3	APPAL/ALASK	1/76- 4/77	76	
604	SAPPSAC	SAT CONTRL	NASA/GSFC	6	U.S.	6/74- 1/75	72	
316	NSTL	MEDICAL	NAT SP TECH LAB	3	U.S.(SOUTH)	10/76-10/76	71	
316	NSTL	HEDICAL	SO REQ MED CONS	3	U.S. (SOUTH)	10/76-10/76	71	
CT\$-22	ICE FLOY	DATA TRANS	NASA/LERC	CTS	ALASKA	8/76- 9/76	70	
108	LAUNCH SUPPORT	SUPPORT	NASA	5	U.S.	3/67-10/72	: 69	
667	ALVA	EDUCATION	PSSC	6	ALASKA	9/77- 7/79	69	
667	ALVA	MEDICAL	PSSC	•	ALASKA	9/77- 7/79	69	
667	ALVA	EDUCATION MEDICAL	PSSC PSSC	•	U-S-(WEST)	9/77- 7/79 9/77- 7/79	69	
254	SHF SEARCH	LAW ENFORC	PUBLIC SYST INC	•	U.S.(WEST)	12/71-12/71	69	
663	U. OF W. INDIES	BROADCAST	DEPT OF ST/AID	1	U.S. WEST INDIES		68	
663	U. OF W. INDIES	EDUCATION	DEPT OF ST/AID	7	WEST INDIES	10/78- 7/79 10/78- 7/79	66 66	
24 9	MARAD	DATA TRANS	AII	Š	M. HEMIS.	3/70-12/71	65	
249	MARAD	HARITIME	AII	5	W. HEMIS.	3/70-12/71	65	
249	MARAD	RANGING	AII	5	W. HEMIS.	3/70-12/71	65	
249	MARAD	DATA TRANS	MARAD	5	W. HEMIS.	3/70-12/71	65	
249	MARAD	HARITIME	MARAD	Š	W. HENIS.	3/70-12/71	65	
291	VHF ZURITA	SUPPORT	AEC	ì	ALASKA/HAW.	6/73-12/73	62	
CT\$-30	TER OF TOMORROW	GRD TERM	FCC	CTS	U.S.	3/78-12/76	56	•
102	DATA XMISSION	MEDICAL	DUKE U. MED CEN	1	U.S. (EAST)	11/71-11/71	54	
329	NORPAX	SUPPORT	U. OF CAL/NAVY	1	N. PACIFIC	5/77- 6/77	53	
340	SAMOA TV SAMFE	BROADCAST	PSSC	1	AOMAZ	9/77- OPEN	53	
261	GE L-BAND	RANGING	6E	3	N. AMERICA	6/70-10/72	51	
631	ENV MEAS EXP	SCIENTIFIC	NASA/GSFC	•	U.S.	6/74- 7/77	50	
336	ERDA/DOD	SUPPORT	ERDA	1	ENEWETAK	10/77- 9/78	49	
CT\$-29	UNIV GRAD STUDY	EDUCATION	VARIAN ASSOC	CTS	U.S.	5/78-12/78	49	
232	VHF EGEG	A/C COMM	E6£6	1	W. HEMIS.	6/68-10/72	48	
232	VHF EGEG	SUPPORT	EGTE	1	W. HEMIS.	6/68-10/72	4.6	
668	HOTOROLA	HAVE PROP	MOTORQLA	6	U.S.	7/77- 9/78	47	
288	GE/MARAD	DATA TRANS	GE GE	2	ATLANTIC	4/72- 5/72	46	
288	GE/MARAD	MARITIME	GE .	3	ATLANTIC	4/72- 5/72	46	
288 342	GE/MARAO Peru	RANGING Support	GE ADVENTURES UNL.	3	ATLANTIC PERU	4/72= 5/72 6/78= 7/78	46	
CTS-16	PROJ INTERCHS	EDUCATION	ARCH OF S.F.	CTS	CALIFORNIA	3/76- 6/78	46	
234	GE/FAA	RANGING	GE	2	N. ATLANTIC	11/69- 6/71	45	
290	VHF BERING SEA	SUPPORT	US/USSR	i	BERING SEA	12/72- 3/73	: 43	
228	VHF GE	DATA TRANS	GE	i	BERMUDA	2/69- 8/71	41	
228	VHF GE	MARITIME	GE	i	BERHUDA	2/69- 8/71	41	
226	VHF GE	RANGING	6E	i	BERMUDA	2/69- 8/71	91	
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⁻ ATE CHURNIER TIME/CTS ACTUAL TIME

TRUST								
SIRIUS	ID#	EXP. NAME	CAJ	EXPERIMENTER	SAT	LOCATION	CHRONOLOGY	HRS
SIRIUS SUPPORT BAMER DOV CORP 3 BERNHUDA 12/76 - 1/77 39	618	TRUST	DATA TRANS	NASA/GSFC		U.S.	9/74- 7/75	40
TOS-25 CONGRESS CONFERENCE GO WASH UNIV CTS 239 UNF BRAZIL COMSAT C/L PROP 239 COMSAT C/L PROP 239 UNF VANGUARD 230 UNF VANGUARD 2310 UNF VANGUARD 2311 UNF VANGUARD 2311 UNF VANGUARD 2312 UNF VANGUARD 2313 UNF NORWAY 2313 UNF NORWAY 2313 UNF NORWAY 2313 UNF NORWAY 2314 UNF NORWAY 2315 UNF NORWAY 2315 UNF NORWAY 2316 UNF VANGUARD 2316 UNF VANGUARD 2317 UNF NORWAY 2318 UNF NORWAY 2319 UNF NORWAY 2310 UNF NORWAY 2310 UNF NORWAY 2310 UNF NORWAY 2310 UNF NORWAY 2311 UNF NORWAY 2311 UNF NORWAY 2312 UNF NORWAY 2313 UNF NORWAY 2314 UNF NORWAY 2315 UNF NORWAY 2315 UNF NORWAY 2316 UNF NORWAY 2317 UNF UNCLA 2318 UNF UNCLA 2319 UNF UNCLA 2319 UNF UNCLA 2310 UNF UNCLA 2310 UNF UNCLA 2311 UNF NORWAY 231 UNF NORWAY 231 UNF UNCLA 232 UNF UNCLA 233 UNF UNCLA 234 UNF UNCLA 235 UNF UNCLA 236 SEC 237 UNF UNCLA 238 UNF UNCLA 239 UNF UNCLA 239 UNF UNCLA 230 UNF UNCLA 231 UNCLA 231 UNCLA 231 UNCLA 232 UNCLA 233 UNF UNCLA 234 UNF UNCLA 235 UNF UNCLA 236 SEC 237 UNF UNCLA 238 UNF UNCLA 239 UNF UNCLA 239 UNF UNCLA 230 UNF UNCLA 230 UNF UNCLA 231 UNCLA 231 UNCLA 232 UNCLA 233 UNF UNCLA 234 UNF UNCLA 235 UNCLA 236 SEC 237 UNF UNCLA 238 UNF UNCLA 239 UNF UNCLA 239 UNF UNCLA 230 UNF UNCLA 230 UNF UNCLA 231 UNCLA 231 UNCLA 232 UNCLA 233 UNCLA 234 UNCLA 235 UNCLA 235 UNCLA 236 UNCLA 237 UNCLA 238 UNCLA 238 UNCLA 239 UNF UNCLA 240 UN	319	SIRIUS	RANGING	BAKER DEV CORP	3	BERMUDA	12/76- 1/77	40
CTS	319	SIRIUS	SUPPORT	BAKER DEV CORP	3	BERMUDA	12/76- 1/77	40
239 VHF WARSELD COUCATION STANFORD UNITY 3 M. MEMIS. 2770-0PCM 39 239 VHF VANGUARD COMPERENCE USC6 3 ATLANTIC 6/60-10/74 26 231 VHF VANGUARD COMPERENCE USC6 3 ATLANTIC 6/60-10/74 26 231 VHF VANGUARD COMPERENCE USC6 3 ATLANTIC 6/60-10/74 26 231 VHF HORDAY METCOR. NORWAY 3 M. ATLANTIC 11/70-2/71 22 231 VHF HORDAY RAMCING NORWAY 3 M. ATLANTIC 11/70-2/71 22 231 VHF HORDAY RAMCING NORWAY 3 M. ATLANTIC 11/70-2/71 22 231 VHF HORDAY RAMCING NORWAY 3 M. ATLANTIC 11/70-2/71 22 232 VHF USCA METCOR. NOAA 3 WORLD 3/60-0PCM 20 2405 SSCC DATA TRANS NOAA 3 WORLD 3/60-0PCM 20 2406 L-BAND TFILAT RAMEING GE 1 U-5- 1/70-1/70-1/70 243 VHF USCLA EDUCATION TRAN ALRES LAB 4 U-5- 1/70-1/70-1/70 243 VHF USCLA EDUCATION TRAN ALRES LAB 4 U-5- 1/70-1/70-1/70 243 VHF USCLA EDUCATION TRAN SARRADOS MEDICAL DEPT OF ST/AID 3 BARBADOS M/70-9/77 18 244 BARBADOS MEDICAL DEPT OF ST/AID 3 BARBADOS M/70-9/77 18 245 VHF SAR SIM RAMEING BOEING 6 M. ATLANTIC M/70-7/70 18 246 SAR L-BAND C/O RAMEING BOEING 6 M. ATLANTIC M/70-7/70 19 246 SAR L-BAND C/O RAMEING BOEING 6 M. ATLANTIC M/70-7/70 10 247 VHF VANGUARD COMPERENCE USC6 1 ATLANTIC M/70-4/75 13 248 GERMADA C/O RAMEING BOEING 6 M. ATLANTIC M/70-4/75 13 249 VHF VANGUARD COMPERENCE USC6 1 ATLANTIC M/70-4/75 13 240 ORI MEDICAL DEPT OF ST/AID 3 BARBADOS M/70-9/70 12 241 VHF SECK MARGING MARGING COMPERENCE USC6 1 ATLANTIC M/70-4/75 10 245 VHF SECK MARGING MARGING MARGING MARGING WAS ALINET CONCLATION OF MARGING	302	NEA	EDUCATION	NAT EDUC ASSOC	1	APPAL/ALASK	1/76- 4/77	39
239	CTS-25	CONGRESS	CONFERENCE	GEO WASH UNIV	CTS	MARYLAND	4/77- 8/78	39
239	236	VHF BRAZIL	EDUCATION	STANFORD UNIV	3	W. HEMIS.	2/70- OPEN	38
239	259	CONSAT C/L PROP	WAVE PROP	COMSAT LABS	\$	W. HEHIS.	1/72- 4/72	37
231	237	VHF VANGUARD	CONFERENCE	USC6	3	ATLANTIC		= '
231 WHF MORNAY HEFOR. NARWAY 3 W. MENIS. 9/70-2/71 22 233 WHF NORMAY RAMGING NORWAY 3 W. ATLANTIC 11/70-2/71 22 233 WHF NORMAY HEFOR. NORWAY 3 W. ATLANTIC 11/70-2/71 22 235 SSCC DATA TRANS NOAA 3 WORLD 3/69-0PEN 20 236 SSCC HETOR. NOAA 3 WORLD 3/69-0PEN 20 238 SSCC HETOR. NOAA 3 WORLD 3/69-0PEN 20 238 WHF UCLA EDUCATION UCLA 2004FINCT TRN 3 U.S. (MEST) 9/71-10/71 18 233 WHF UCLA EDUCATION UCLA 3 U.S. (MEST) 9/71-10/71 18 233 WHF SAR SIM RAMBING HEDICAL DEPT OF ST/AZD 3 WARRAND A/77-9/77 15 344 BARBADOS HEDICAL DEPT OF ST/AZD 3 WARRAND A/77-9/77 15 344 BARBADOS HEDICAL DEPT OF ST/AZD 3 WARRAND A/77-9/77 15 344 DRI	239	VHF VANGUARD	DATA TRANS	USCG	3	ATLANTIC	6/68-10/74	
233	231	VHF HSFN PROP	WAVE PROP	HSFN NETWORK	3	W. HEMIS.	9/70- 2/71	
### AND COMPANY RAMESING NORMAY S N. ATLANTIC 11/70 - 27/71 22 22 22 22 23 25 25 26 25 26 26 26 26	233	VHF NORWAY	HETEOR.	NORWAY	3	N. ATLANTIC	11/70- 2/71	
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208 SSCC	= = :		MEDICAL		Ā.,			
208 SSCC					3		** ** · -	
L-BAND TRILAT SAMEING GE 1		·			-			
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283 WHF UCLA EDUCATION TRW 3 U.S. (WEST) 9/T1-10/T1 15 335 WHF SAR SIM RAMBING BAKER DEV CORP 3 BERRUDA 6/T7-9/T7 15 344 BARBADOS HEDICAL DEPT OF ST/AID 3 BARBADOS 8/78-9/78 14 664 SAR L-BAND C/O RAMBING BOEING 6 M. ATLANTIC 8/74-4/T5 13 239 WHF VANGUARD COMFERENCE USCG 1 ATLANTIC 6/68-7/69 12 239 WHF VANGUARD DATA TRANS USCG 1 ATLANTIC 6/68-7/69 12 239 WHF VANGUARD DATA TRANS USCG 1 ATLANTIC 6/68-7/69 12 2314 DRI HETEOR. DESERT RES INST 1 AMTARCTICA 12/76-1/77 10 318 DRI HETEOR. DESERT RES INST 1 AMTARCTICA 12/76-1/77 10 210 MSSCC DATA TRANS DESERT RES INST 1 AMTARCTICA 12/76-1/77 10 210 MSSCC HETEOR. SIERRA RES CORP 3 U.S. 1/72-12/72 9 403 RAD ASTRO INTER WAVE PROP NASA/ESFC 6 WORLD 3/69-6/72 7 210 MSSCC HETEOR. NOAA 1 WORLD 3/69-6/72 7 2266 GE/MARAD DATA TRANS GE 1 ATLANTIC 4/72-5/72 7 286 GE/MARAD HARITINE GE 1 ATLANTIC 4/72-5/72 7 286 GE/MARAD HARITINE GE 1 ATLANTIC 4/72-5/72 7 286 GE/MARAD RANGING COMFERENCE GTE LABS CTS US. 3/71-6/72 5 315 ERDA SUPPORT MASA USSINGHOUSE 1 U.S. (1/79-1/75 5) 315 ERDA SUPPORT MASA 3 PACIFIC 7/76-8/76 5 315 ERDA SUPPORT RANGING SANDIA/AEC 1 U.S. 3/71-6/72 5 315 ERDA SUPPORT RANGING SANDIA/AEC 1 U.S. 3/71-6/72 5 315 ERDA SUPPORT RANGING SANDIA/AEC 1 U.S. 3/71-6/72 5 315 ERDA SUPPORT RANGING SANDIA/AEC 1 U.S. 3/71-6/72 5 315 ERDA SUPPORT RANGING SANDIA/AEC 1 U.S. 3/71-6/72 5 315 ERDA SUPPORT RANGING SANDIA/AEC 1 U.S. 3/71-6/72 5 315 ERDA SUPPORT RANGING SANDIA/AEC 1 U.S. 3/71-6/72 5 315 ERDA SUPPORT RANGING SANDIA/AEC 1 U.S. 3/71-6/72 5 315 ERDA SUPPORT RANGING SANDIA/AEC 1 U.S. 3/71-6/72 5 315 ERDA SUPPORT RANGING SANDIA/AEC 1 U.S. 5/71-10/72 2/77 315 ERDA SUPPORT RANGING SANDIA/AEC 1 U.S. 5/71-10/72 2/77 316 ERDA SUPPORT RANGING SANDIA/AEC 1 U.S. 5/71-10/72 2/77 317 ERDA SUPPORT RANGING SANDIA/AEC 1 U.S. 6/78-7/75 5 315 ERDA SUPPORT RANGING SANDIA/AEC 1 U.S. 6/78-7/75 5 315 ERDA SUPPORT RANGING SANDIA/AEC 1 U.S. 6/78-7/75 5 315 ERDA SUPPORT RANGING SANDIA/AEC 1 U.S. 6/78-7/75 5 316 ERDA SUPPORT RANGING SANDIA/AEC 1 U.S. 6/78-7/75 5 317 ERDA SUPPORT RANGING SANDIA/AEC 1 U.S.	-	· · · · · · · · · · · · · · · · · ·			i			
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336	-)							
BARBADOS						T		
SAR L-BAND C/O RAMBING BOEING 6 M. ATLANTIC 8/79 - 9/75 13		4 · · · · · · · · · · · · · · · · · · ·			_			
SAR L-BAND C/O RAMBING FAX SALIANTIC S/74-475 13	5 7 . 7				3			
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CTS-OP SALINET 287 VMF SEEK METEOR. SIERRA RES CORP 210 ASTRO INTER 220 MSSCC DATA TRANS METEOR. NOAA 1 WORLD 3/69-6/72 7 286 GE/MARAD DATA TRANS GE GE/MARAD MARITIME GE 1 ATLANTIC 4/72-5/72 7 286 GE/MARAD MARITIME MA		T (2 3			1			
287 VMF SEEK METEGR. SIERRA RES CORP 3 U.S. 1/72-12/72 9 603 RAD ASTRO INTER WAVE PROP NASA/SSFC 6 WORLD 6/74-6/75 9 210 MSSCC DATA TRANS NOAA 1 WORLD 3/69-6/72 7 210 MSSCC METEGR. NOAA 1 WORLD 3/69-6/72 7 288 GE/MARAD DATA TRANS SE 1 ATLANTIC 4/72-5/72 7 288 GE/MARAD HARITINE GE 1 ATLANTIC 4/72-5/72 7 288 GE/MARAD HARITINE GE 1 ATLANTIC 4/72-5/72 7 288 GE/MARAD RANGING WESTINGHOUSE 1 U.S. (WEST) 2/71-2/78 7 250 LBAND RANGING RANGING WESTINGHOUSE 1 U.S. (WEST) 2/71-5/71 6 CTS-33 WIDE BAND COMM. CONFERENCE GTE LABS CTS U.S. 1/79-0PEN 6 284 VMF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71-6/72 5 284 VMF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71-6/72 5 285 VMF STANFORD SUPPORT ERDA 3 PACIFIC 7/76-8/76 5 315 ERDA SUPPORT ERDA 3 PACIFIC 7/76-8/76 5 315 ERDA SUPPORT ERDA 3 PACIFIC 7/76-8/76 5 253 SMF VLEI TIME/FREQ RADIO RES LABS 1 JAPAN 1/77-2/77 5 234 GE/FAA RANGING GE 1 M. ATLANTIC 11/69-6/71 4 272 VMF CLIPPER SUPPORT MOODY COLLEGE 1 ATLANTIC 11/69-6/71 4 272 VMF CLIPPER SUPPORT MOODY COLLEGE 1 ATLANTIC 7/73-8/77 4 673 NIE EDUCATION APP. REG. COMM. 6 APPALACHIA 1/78-7/79 3 253 SMF VLBI TIME/FREQ SMITHSONIAN INS 1 U.S. 5/71-10/72 2 285 VMF STANFORD EDUCATION STANFORD UNIV 1 U.S. (WEST) 5/71-6/72 2 300 VMF IHCHIS HEDICAL IMCHIS 1 ALASKA 5/78-5/74 2 670 TEAM EDUCATION MONTANA ST U 6 HONTANA 9/77-7/79 2 261 GE L-BAND RANGING WESTINGHOUSE 5 U.S. (WEST) 4/71-5/71 1		Marie Control of the			_			
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288 GE/MARAD DATA TRANS GE 1		*****		· · = · · · ·	1		_ 1	
### SECTION OF PARTICLE 1 ATLANTIC 4/72-5/72 7 10 10 10 10 10 10 10		- 1. <u>- 7</u> 1 1		11 - 111	-			
### GE/MARAD RANGING SE 1							. ,	
LAUNCH SUPPORT SUPPORT NASA 6 U.S. 7/77 - 2/78 7 250 L-BAND RANGING RANGING WESTINGHOUSE 1 U.S. (WEST) 2/71 - 5/71 6 6 6 6 6 6 6 6 6		To the control of the			1			
250 L-BAND RANGING RANGING WESTINGHOUSE 1 U.S. (WEST) 2/71-5/71 6				- - .	1			7
CTS-33 WIDE BAND COMM. CONFERENCE GTE LABS CTS U.S. 1/79- OPEN 6 284 VMF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71-6/72 5 284 VMF HIGH NOTE RANGING SANDIA/AEC 3 U.S. 3/71-6/72 5 407 IMDRAS SAT CONTRL NASA/GSFC 6 U.S. 6/74-7/75 5 315 ERDA DATA TRANS ERDA 3 PACIFIC 7/76-8/76 5 315 ERDA SUPPORT ERDA 3 PACIFIC 7/76-8/76 5 253 SMF VLPI TIME/FREQ RADIO RES LABS 1 JAPAN 1/77-2/77 5 234 6E/FAA RANGING GE 1 M. ATLANTIC 11/69-6/71 9 292 VMF CLIPPER SUPPORT MOODY COLLEGE 1 ATLANTIC 11/69-6/71 9 292 VMF CLIPPER SUPPORT MOODY COLLEGE 1 ATLANTIC 7/73-8/77 4 673 MIE EDUCATION APP. REG. COMM. 6 APPALACHIA 1/76-7/79 3 253 SMF VLBI TIME/FREQ SMITHSONIAN INS 1 U.S. 5/71-10/72 2 285 VMF STANFORD EDUCATION STANFORD UNIV 1 U.S. (WEST) 5/71-6/72 2 300 VMF IHCHIS MEDICAL IHCHIS 1 ALASKA 5/79-5/74 2 670 TEAM EDUCATION MONTANA ST U 6 MONTANA 9/77-7/79 2 246 SSRA RANGING WESTINGHOUSE 5 U.S. (WEST) 4/71-5/71 1 250 L-BAND RANGING WESTINGHOUSE 5 U.S. (WEST) 2/71-5/71 0	;				6			7
20H VMF HIGH NOTE RANGING SANDIA/AEC 1 U.S. 3/71-6/72 5 20H VMF HIGH NOTE RANGING SANDIA/AEC 3 U.S. 3/71-6/72 5 407 IHDRAS SAT CONTRL MASA/GSFC 6 U.S. 6/74-7/75 5 315 ERDA DATA TRANS ERDA 3 PACIFIC 7/76-8/76 5 315 ERDA SUPPORT ERDA 3 PACIFIC 7/76-8/76 5 253 SMF VLPI TIME/FREQ RADIO RES LABS 1 JAPAN 1/77-2/77 5 234 6E/FAA RANGING GE 1 M. ATLANTIC 11/69-6/71 4 292 VMF CLIPPER SUPPORT MOODY COLLEGE 1 ATLANTIC 17/73-8/77 4 673 NIE EDUCATION APP. REG. COMM. 6 APPALACHIA 1/70-7/79 3 253 SMF VLBI TIME/FREQ SMITHSONIAN INS 1 U.S. 5/71-10/72 2 285 VMF STANFORD EDUCATION STANFORD UNIV 1 U.S.(VEST) 5/71-6/72 2 300 VMF IHCHIS HEDICAL IHCHIS 1 ALASKA 5/74-5/74 2 400 TEAM EDUCATION MONTANA ST U 6 MONTANA 9/77-7/79 2 246 SSRA RANGING GE 1 N. AMERICA 6/70-10/72 1 246 SSRA RANGING WESTINGHOUSE 5 U.S.(WEST) 2/71-5/71 0	250	L-BAND RANGING	ranging	WEST, INGHOUSE	1	U.S.(HEST)	2/71- 5/71	6
28h VHF HIGH NOTE RANGING SANDIA/AEC 3 U.S. 3/71-6/72 5 407 IHDRAS SAT CONTRL MASA/GSFC 6 U.S. 6/74-7/75 5 315 ERDA DATA TRANS ERDA 3 PACIFIC 7/76-8/76 5 315 ERDA SUPPORT ERDA 3 PACIFIC 7/76-8/76 5 253 SHF VLRI TIME/FREQ RADIO RES LABS 1 JAPAN 1/77-2/77 5 234 SE/FAA RANGING GE 1 M. ATLANTIC 11/69-6/71 4 292 VHF CLIPPER SUPPORT MOODY COLLEGE 1 ATLANTIC 7/73-8/77 4 673 NIE EDUCATION APP. REG. COHM. 6 APPALACHIA 1/76-7/79 3 253 SHF VLBI TIME/FREQ SHITHSONIAN INS 1 U.S. (WEST) 5/71-10/72 2 285 VHF STANFORD EDUCATION STANFORD UNIV 1 U.S. (WEST) 5/71-6/72 2 300 VHF IHCHIS MEDICAL IHCHIS 1 ALASKA 5/74-5/74 2 470 TEAM EDUCATION MONTANA ST U 6 MONTANA 9/77-7/79 2 261 GE L-BAND RANGING GE 1 N. AMERICA 6/70-10/72 1 246 SSRA RANGING WESTINGHOUSE 5 U.S. (WEST) 2/71-5/71 0	CTS-33	WIDE SAND COMM.	CONFERENCE	GTE LABS	CTS	U.S.	1/79- OPEN	6
AGT INDRAS SAT GONTRL NASA/GSFC 6 U.S. 6/74-7/75 5 315 ERDA DATA TRANS ERDA 3 PACIFIC 7/76-8/76 5 315 ERDA SUPPORT ERDA 3 PACIFIC 7/76-8/76 5 253 SHF VLRI TIME/FREQ RADIO RES LABS 1 JAPAN 1/77-2/77 5 234 6E/FAA RANGING GE 1 M. ATLANTIC 11/60-6/71 4 292 VHF CLIPPER SUPPORT MOODY COLLEGE 1 ATLANTIC 7/73-8/77 4 673 NIE EDUCATION APP. REG. COHM. 6 APPALACHIA 1/78-7/79 3 253 SHF VLBI TIME/FREQ SHITHSONIAN INS 1 U.S. S/71-10/72 2 265 VHF STANFORD EDUCATION STANFORD UNIV 1 U.S. (WEST) 5/71-6/72 2 300 VHF INCHIS MEDICAL INCHIS 1 ALASKA 5/74-5/74 2 470 TEAM EDUCATION MONTANA ST U 6 MONTANA 9/77-7/79 2 261 GE L-BAND RANGING GE 1 N. AMERICA 6/70-10/72 1 246 SSRA RANGING WESTINGHOUSE 5 U.S. (WEST) 2/71-5/71 0	284	AME HIGH NULE	ranging	SANDIA/AEC		u.s.	3/71- 6/72	5
315 EROA DATA TRANS ERDA 3 PACIFIC 7/76-8/76 5 5 5 5 5 5 5 5 5		YHF HIGH NOTE	ranging	SANDIA/AEC	3	U.S.	3/71- 6/72	5
315 EROA SUPPORT EROA 3 PACIFIC 7/76- 8/76 5 253 SHF VLRI TIME/FREQ RADIO RES LABS JAPAN 1/77- 2/77 5 234 6E/FAA RANGING GE 1 M. ATLANTIC 11/69- 6/71 4 292 VHF CLIPPER SUPPORT MOODY COLLEGE 1 ATLANTIC 7/73- 8/77 4 4 4 4 4 4 4 4 4	407	INDRAS	SAT CONTRL	NASA/GSFC	6	U.S.	6/74- 7/75	.5
253 SHF VLPI TIME/FREQ RADIO RES LABS 1 JAPAN 1/77-2/77 5 234 SE/FAA RANGING GE 1 M. ATLANTIC 11/69-6/71 9 292 WHF CLIPPER SUPPORT MOODY COLLEGE 1 ATLANTIC 7/73-8/77 4 673 MIE EDUCATION APP. REG. COMM. 6 APPALACHIA 1/78-7/79 3 253 SHF VLBI TIME/FREQ SHITHSONIAN INS 1 U.S. 5/71-10/72 2 285 WHF STANFORD EDUCATION STANFORD UNIV 1 U.S.(WEST) 5/71-6/72 2 300 WHF INCHIS HEDICAL INCHIS 1 ALASKA 5/78-5/74 2 261 GE L-BAND RANGING GE 1 N. AMERICA 6/70-10/72 1 246 SSRA RANGING WESTINGHOUSE 5 U.S.(WEST) 4/71-5/71 0	315	ERDA	DATA TRANS	ERDA	. 3	PACIFIC	7/76- 8/76	5
234 SE/FAA RANGING GE 1 M. ATLANTIC 11/69-6/71 PA 292 WHF CLIPPER SUPPORT MOODY COLLEGE 1 ATLANTIC 7/73-8/77 4 673 MIE EDUCATION APP. REG. COMM. 6 APPALACHIA 1/78-7/79 3 253 SHF VLBI TIME/FREQ SMITHSONIAN INS 1 U.S. 5/71-10/72 2 285 WHF STANFORD EDUCATION STANFORD UNIV 1 U.S.(WEST) 5/71-6/72 2 300 WHF INCHIS HEDICAL INCHIS 1 ALASKA 5/79-5/74 2 670 TEAM EDUCATION MONTANA ST U 6 MONTANA 9/77-7/79 2 261 GE L-BAND RANGING GE 1 N. AMERICA 6/70-10/72 1 246 SSRA RANGING WESTINGHOUSE 5 U.S.(WEST) 4/71-5/71 1 250 L-BAND RANGING WESTINGHOUSE 3 U.S.(WEST) 2/71-5/71	315	ERDA	SUPPORT	ERDA	3	PACIFIC	7/76- 8/76	5
292 WHF CLIPPER SUPPORT MOODY COLLEGE 1 ATLANTIC 7/73-8/77 4 673 NIE EDUCATION APP. REG. COMM. 6 APPALACHIA 1/78-7/79 3 253 SHF VLBI TIME/FREQ SHITHSONIAN INS 1 U.S. 5/71-10/72 2 285 WHF STANFORD EDUCATION STANFORD UNIV 1 U.S.(WEST) 5/71-6/72 2 300 WHF IHCHIS HEDICAL IHCHIS 1 ALASKA 5/78-5/74 2 670 TEAM EDUCATION MONTANA ST U 6 MONTANA 9/77-7/79 2 261 GE L-BAND RANGING GE 1 N. AMERICA 6/70-10/72 1 246 SSRA RANGING WESTINGHOUSE 5 U.S.(WEST) 4/71-5/71 1 250 L-BAND RANGING RANGING WESTINGHOUSE 3 U.S.(WEST) 2/71-5/71	253	SHF VLEI	TIME/FREQ	RADIO RES LABS	1 .	JAPAN	1/77- 2/77	5
EDUCATION APP. REG. COMM. 6 APPALACHIA 1/70-7/79 3 253 SHF VLBI TIME/FREQ SHITHSONIAN INS 1 U.S. 5/71-10/72 2 285 VHF STANFORD EDUCATION STANFORD UNIV 1 U.S.(WEST) 5/71-6/72 2 300 VHF IHCHIS HEDICAL IHCHIS 1 ALASKA 5/70-5/74 2 670 TEAM EDUCATION MONTANA ST U 6 MONTANA 9/77-7/79 2 261 GE L-BAND RANGING GE 1 N. AMERICA 6/70-10/72 1 246 SSRA RANGING WESTINGHOUSE 5 U.S.(WEST) 4/71-5/71 1 250 L-BAND RANGING WESTINGHOUSE 3 U.S.(WEST) 2/71-5/71	234	SE/FAA	RANGING	GE	1	M. ATLANTIC	11/69- 6/71	
253 SHF VLBI TIME/FREQ SMITHSONIAN INS 1 U.S. 5/71-10/72 2 285 VHF STANFORD EDUCATION STANFORD UNIV 1 U.S.(WEST) 5/71-6/72 2 300 VHF IHCHIS HEDICAL IHCHIS 1 ALASKA 5/78-5/74 2 670 TEAM EDUCATION MONTANA ST U 6 MONTANA 9/77-7/79 2 261 GE L-BAND RANGING GE 1 N. AMERICA 6/70-10/72 1 246 SSRA RANGING WESTINGHOUSE 5 U.S.(WEST) 4/71-5/71 1 250 L-BAND RANGING RANGING WESTINGHOUSE 3 U.S.(WEST) 2/71-5/71	292	VHF CLIPPER	SUPPORT	MOODY COLLEGE	1	ATLANTIC	7/73- 8/77	4
253 SHF VLBI TIME/FREQ SHITHSONIAN INS 1 U.S. 5/71-10/72 2 285 VHF STANFORD EDUCATION STANFORD UNIV 1 U.S.(WEST) 5/71-6/72 2 300 VHF IHCHIS HEDICAL IHCHIS 1 ALASKA 5/79-5/74 2 670 TEAM EDUCATION MONTANA ST U 6 MONTANA 9/77-7/79 2 261 GE L-BAND RANGING GE 1 N. AMERICA 6/70-10/72 1 246 SSRA RANGING WESTINGHOUSE 5 U.S.(WEST) 4/71-5/71 1 250 L-BAND RANGING RANGING WESTINGHOUSE 3 U.S.(WEST) 2/71-5/71	673	NIE	EDUCATION	APP. REG. COMM.	6	APPALACHIA	1/76- 7/79	. 3
285 VHF STANFORD EDUCATION STANFORD UNIV 1 U.S.(WEST) 5/71-6/72 2 300 VHF IHCHIS HEDICAL IHCHIS 1 ALASKA 5/74-5/74 2 670 TEAM EDUCATION MONTANA ST U 6 MONTANA 9/77-7/79 2 261 GE L-BAND RANGING GE 1 N. AMERICA 6/70-10/72 1 246 SSRA RANGING WESTINGHOUSE 5 U.S.(WEST) 4/71-5/71 1 250 L-BAND RANGING RANGING WESTINGHOUSE 3 U.S.(WEST) 2/71-5/71 0					1			
300 VHF IHCHIS MEDICAL IHCHIS 1 ALASKA 5/79-5/74 2 670 TEAM EDUCATION MONTANA ST U 6 MONTANA 9/77-7/79 2 261 GE L-BAND RANGING GE 1 N. AMERICA 6/70-10/72 1 246 SSRA RANGING WESTINGHOUSE 5 U.S.(WEST) 4/71-5/71 1 250 L-BAND RANGING RANGING WESTINGHOUSE 3 U.S.(WEST) 2/71-5/71					_			2
261 GE L-BAND RANGING GE 1 N. AMERICA 6/70-10/72 1 246 SSRA RANGING WESTINGHOUSE 5 U.S.(WEST) 4/71- 5/71 1 250 L-BAND RANGING RANGING WESTINGHOUSE 3 U.S.(WEST) 2/71- 5/71 0								2
261 GE L-BAND RANGING GE 1 N. AMERICA 6/70-10/72 1 246 SSRA RANGING WESTINGHOUSE 5 U.S.(WEST) 4/71- 5/71 1 250 L-BAND RANGING RANGING WESTINGHOUSE 3 U.S.(WEST) 2/71- 5/71 0					_			2
246 SSRA RANGING WESTINGHOUSE 5 U.S.(WEST) 4/71-5/71 1 250 L-Band Ranging Ranging Westinghouse 3 U.S.(West) 2/71-5/71 0					ī			
250 L-BAND RANGING RANGING WESTINGHOUSE 3 U.S.(WEST) 2/71-5/71 0					ŝ			
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A ATE SCHENIU EN TIME/CTS ACTUAL TIME

IDe	EXP. NAME	CAT	exper inenter	SAT	LOCATION	CHRONOLOGY	HRS
606	RADIO BEACON	MAVE PROP	NOAA	•	EUROPE	6/74- 7/79	Ö
606	RADIO BEACON	HAVE PROP	NOAA	6	U.S.	6/74- 7/79	Ö
677	IHS	COMPUTER	INDIAN HLTH SER	6	ALASKA	9/78- 7/79	C
677	IHS	CONFERENCE	INDIAN HLTH SER	6	ALASKA	9/78- 7/79	0
677	IHS	MEDICAL	INDIAN HLTH SER	6	ALASKA	2/78- 7/79	Ó
CTS-31	3 WAY TIME TRAN	TIME/FREQ	U.S. NAVAL OBS.	CTS	U.S./CANADA	1/79- 7/79	D
CTS-35	CT SCANNING NET	MEDICAL	U. OF COLORADO	CTS	U.S.IVEST)	4/79- 7/79	
CT5-12	AESP II	EDUCATION	APP. REG. COMM.	CTS	APPALACHIA	PENDING	C
CTS-17	HEALTH ED TV	EDUCATION	ASSOC OF M HOSP	CTS	ROCKY MTNS	PENDING	ā
CTS-17	HEALTH ED TV	MEDICAL	ASSOC OF W HOSP	CTS	ROCKY HTNS	PENDING	Õ
CTS-27	WOMENS SAT SER	CONFERENCE	NAT WOMENS AS	CTS	U.S.	PENDING	0

[.] ATS SCHEDULED TIME/CTS ACTUAL TIME

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SECTION 4

ATS/CTS EXPERIMENT BY STATES, REGIONS OCEANS AND FOREIGN COUNTRIES

For further satellite planning as well as for evaluation of past satellite programs it is important to know which geographical regions were served by the ATS and CTS programs. This section contains a listing of the states in which the experiments were conducted. In some instances, the experiment took place over a geographical region, an ocean and/or a foreign country. This information is also given.

4.1 ATS-CTS EXPERIMENTS BY STATE

ALABAMA C-19

227, 232, 281, 291, 295, 300, 302, 353, 315, 329, 612, 661, 667, 677, CTS-7 ALASKA

CTS-13, CTS-22

ARIZONA 612, CTS-11

ARKANSAS None

231, 234, 236, 253, 258, 282, 283, 285, 305, 329, 343, 650, CTS-4, CALIFORNIA

CTS-4A, CTS-11, CTS-16, CTS-18, CTS-20, CTS-21, CTS-27, CTS-28,

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CTS-29

COLORADO 238, 283, 287, 612, 671, CTS-7,

CTS-11, CTS-21, CTS-35

CONNECTICUT None

DELAWARE None

DISTRICT of COLUMBIA 259, 338, CTS-20, CTS-25, CTS-27

258, 307, CTS-20 **FLORIDA**

GEORGIA CTS-19

235, 291, 295, 297, 305, 315, 320 HAWAII

IDAHO 612, CTS-11

606, 668, CTS-27 ILLINOIS

INDIANA None

IOWA None

KANSAS None

612, 673, CTS-7, CTS-19 KENTUCKY

LOUISIANA None

MAINE None

MARYLAND 609, 658, CTS-1, CTS-6, CTS-7, CTS-15,

CTS-18, CTS-19, CTS-20, CTS-24

4.1 ATS-CTS EXPERIMENTS BY STATE (CONT'D)

MASSACHUSETTS

CTS-1, CTS-29

MICHIGAN

None

MINNESOTA

312, 631

MISSISSIPPI

316, CTS-19

MISSOURI

CTS-19

MONTANA

330, 612, 670, 671, CTS-7, CTS-11

CTS-13

NEBRASKA

None

NEVADA

285, 287, 315, 318, 336, 612, CTS-11

NEW HAMPSHIRE

None

NEW JERSEY

247, 249, 609

NEW MEXICO

285, 612, CTS-11

NEW YORK

234, 248, 288, 293, 317, 338, 674,

CTS-27

NORTH CAROLINA

102, 230, 231, 244, 245, 248, 252,

264, 321, 609, CTS-1

NORTH DAKOTA

None

OHIO

609, 612, 673, CTS-TEP, CTS-1, CTS-15, CTS-18, CTS-20, CTS-22,

CTS-24, CTS-30

OKLAHOMA

CTS-19

OREGON

CTS-4A, CTS-11

PENNSYLVANIA

612, 623, 673

RHODE ISLAND

332

SOUTH CAROLINA

CTS-19

SOUTH DAKOTA

None

TENNESSEE

612, 673, CTS-19

4.1 ATS-CTS EXPERIMENTS BY STATE (CONT'D)

TEXAS 249, 306, 309, 325, 609, CTS-1

CTS-19, CTS-27

UTAH 612, CTS-11

VERMONT None

VIRGINIA 321, 609, CTS-1, CTS-19, CTS-20, CTS-26

CID-10

WASHINGTON 282, 609, 612, CTS-7, CTS-11, CTS-13

WEST VIRGINIA 612, 673, CTS-28

WISCONSIN 282

WYOMING 612, CTS-11

4.2 ATS-CTS EXPERIMENTS BY REGION

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APPALACHIA 286, 612, 673, CTS-12 289, 306, 317, 318, 324, 343 ANTARCTICA ARCTIC OCEAN 249, CTS-22 ATLANTIC OCEAN 107, 185, 225, 226, 247, 249, 252, 264, 265 288, 292, 293, 307, 309, 317, 325, 332, 664 333, 344 BARBADOS 290 BERING SEA BRAZIL 236, 259, 302 230, 244, 245, 252, 257, 260, 263, 324, CANADA 657, CTS-4, CTS-31 228, 292, 319, 325 CARIBBEAN 230 CHILE 102, 310 EASTERN U.S. 225 **ENGLAND** 336 ENEWETAK FIJI ISLANDS 297 606 **GERMANY** 321 GREECE GULF OF MEXICO 325 332 GULF STREAM 606, 647 INDIA 333 **JAMAICA** 304, 321 **JAPAN NETHERLANDS** 226 232, 281 NEW ZEALAND

234

NEWFOUNDLAND

4.2 ATS-CTS EXPERIMENTS BY REGION (CONT'D)

NORWAY	233
PACIFIC NORTHWEST	282
PACIFIC OCEAN	107, 185, 231, 235, 264, 288, 295, 297, 305, 307, 315, 322, 329
PERU	230, 348
PHILIPPINES	321
PUERTO RICO	331, 660
ROCKY MOUNTAIN STATES	294, 671, CTS-17
SAMOA	320, 672
SOUTHERN OCEAN	306, 317
SOUTHERN U.S.A.	316, CTS-19
TRUST TERRITORY	338
U.S.	108, 185, 211, 253, 268, 284, 295, 301, 312, 601, 602, 604, 605, 606, 618, 631, 664, 666, 668, 674, CTS-7, CTS-21, CTS-25, CTS-27, CTS-31, CTS-33
U.S. VIRGIN ISLANDS	331, 660
WEST COAST U.S.A.	246, 250, 310, CTS-11
WEST INDIES	663
WESTERN EUROPE	608, 638
WESTERN HEMISPHERE	202, 229, 236, 238, 249, 259, 261, 281, 315, 321, 617, CTS-28
WESTERN U.S.A.	CTS-11, CTS-35
WORLD	183, 205, 210, 321, 603

SECTION 5 UNITED STATES CTS DEMONSTRATIONS

An important part of both the ATS and CTS projects, was the demonstrations given utilizing these satellites. A demonstration differs from an experiment usually by length of time. A demonstration generally takes place over part of a day whereas an experiment generally lasts for many days, even years. Demonstrations are important because they demonstrate a capability and for this reason should be archived. This section lists the United States demonstrations of the CTS satellite. Unfortunately, no similar data exists for the ATS program.

LOCATION	n	Balt., MD/Lima, OH	Kalamazoo, MI	Ottawa, Canada/Cleve., OH	Phila., PA	Lincoln, NE	Balt., MD/Cleve., OH	Yellowstone Pk, WY	Columbia, SC	Chicago Sci. Museum, IL	Barrow, AK	Pecatonica, IL	Rockford, IL	Cleve., OH/Balt., MD	New York City, NY		U. of MD/Oil Horthern U., OH	Mt. View, CA/Greenbelt, MD	Hastings Coll., CA	Cleve., OH/Mt. View, CA	Wash., DC/San Jose, Ch	Syracuse U., NY/Canada	Mt. View, CA/ Greenbelt, MD	Cleve., OH/Chicago, IL	Cleve., OH/Ottawa, Canada	Seattle, WA/Bethesda, MD	Atlanta, GA
EXPERIMENT		15	L18/TET	CRC/LeRC/	18/CRC	21,18	15,118	6, Lerc, NBC	19, (6)	L18/TET	F18	L18/TET	L18/TET	L18/15	618		15	618	AIB	L18,A18,4	21/PET	L18/PET	AIR	L18/TET	L18/CRC	13/PET	21/PET
DEMO. REQ. HO.										\$1					v−4	 . 5			13	-	16		12				
EVENT		IEEE Joint Meeting	Kalamazoo Bicentennial	CTS Inaug. & Christening	Inter. Comm. Conf., 1976	Conference on Open Learning	Paramp Review	The Glorious Pourth	Scottish Games	Public Communication	Public Communication	Grade School	Public Communication	U.S. User Htg. 16	N.Y.C. Board of Education		Moot Court	NASA Conference	Legal Contin. Educ. Sem.	U.S. User Meeting 17	Mayors Conference	Crisis Management	Symposium	EEO Spacemobile	Viking Presentation	Rural Health Conference	Exceptional Children Conv.
		D																									
DATE	1976	9/9	5/10-5/21	5/20	6/14	91/9	6/23	3/4	7/10	8/3-8/14	8/25	10/29	11/1-11/12	11/11	12/7	1977	1/25	1/27	1/29	2/8	3/1	3/3-3/10	3/12	3/15-3/17	3/24	3/31	4/13
HO.		-	5	m	4	រភ	vo	1	00	6	10	11	12	13	14		15	16	17	18	19	20	21	22	23	24	25

LOCATION		Gulf Shores, AL	Indiana U., IN/Balt., MD	Cleve., OH,/Greenbelt, ND	U. Kentucky, KY	Ht. View, CA/Montreal, CN	Hot Sp., AR/Albany, NY	Vail, CO	U. Alabama, AL	MD/CO/Seattle, WA	Johnstown, PA	Moraine Pk., PA	Greenbelt, MD/Mt. View, CA	ID/HT/WA/AK	ID/HT/WA	Atlanta, GA	NYC/ARC	Cleve., OH/Seattle, WA	WA/VA/SECA	Atlanta, GA	Atlanta, GA	Atlanta, GA	Atlanta, GA	Bethesda, MD	Edna, TX	Hershey, PA	GSFC, MD/ARC, CA	San Diego, CA/Appalac.	Miami Beach, PL
EXPERIMENT		19/TET	21/TET	L18/G18	21/TET		618,1,11	21/11	21/PET/TET	22	9	20	18	13/PET	13/PET	21/TET	21/A18	L18/13	21/TET	7/PET	G18/PET	G18/PET	PROJ/PET	21	21	618	618	21	11/PET
DEMO. REQ.					34	91	42	36	39	*		6+	19	so.	11-9	32	99		47	55	1 50	51	9 5	19	288	9	38	69	59
EVENT		Annual SECA Conference	Health Science Conference	U.S. User Mtg. 18	Special Education Conf.	International Symposium	Employment Conference	PSSC Workshop	Medical Workshop	NOAA Conference	Disaster Relief-Johnstown	Boy Scout Jamboree	Co-op Conference	Governors Conference	Medical Clinics	Am. Hospital Convention	SEND/RECEIVE Sat. Demo.	U.S. User Mtg. 19	Rehabilitation Conference	Intelcom 77-Medical Seminar	Intelcom 77-Plenary Session	Intelcom 77-Educ. Session	Intelcom 77-Canad. Transm.	American Dietetic Assoc.	Bureau of Reclamation	Medical Center	Satellite Arts Project	Social Work Symposium	AMA Sci. Meeting
							· /	, : , :																					
DATE	1977	4/19-4/21	5/23	5/25	1/9	01/9-6/9	6/10-6/15	11/9	91/1-1/1	1/21	1/25-1/26	7/31-8/9	8/4	8/23	8/23-9/6	8/30	9/11	6/27	€ 9/27	10/9	10/10	10/10	10/11	10/14	10/28	11/7	11/20-11/23	11/21	12/12
10.		56	27	28	53	30	31	32	33	34	35	36	37	38	39	40	41	42	.43	4	45	46	47	8	49	20	51	52	23

1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1	LOCATION		Charleston, SC	Ottawa, Canada/Menlo Pk., CA	Birmingham, AL	Columbia, SC/SECA Wetwork	Huntsville, AL	Greensboro, NC	Owings Hills, MD/Austin, TX	GSFC, MD/San Diego, CA	Washington, DC	Washington, DC	GSFC, MD/LeRC, OH/Balt., MD	Indianapolis, IN	Lerc, OH/ARC, CA	JSC/CRC	Chicago, IL	ARC, CA/NASA IIq., DC	Boulder, CO	MSFC/LeRC, OH	Albuquerque, NM/ Crow Agency, MT/H18	San Diego, CA/6	NASA IM., DC/LeRC, OH	Ft. Worth, TX/Nash., TN	G18/LeRC, OH/GSFC, MD	San Diego, CA/Wash., DC	NASA/Hq., DC/LeRC, OH	NASA Hg., DC/ARC, CA
	Experiment		21/PET	21	21/PET	19/PET	L18/TET	A18/PET	618	21	21/PET	21/PET	618	21/PET	E.18	318	21/PET/TET	N18	21/12	21/11	PRJ/PET/TET	24/PET	1.18	21/1/11	PRJ	25/PET	L18	A18
DEMO. REQ.	NO.		21	73	99	29	84	75-78	11	.ng 31	62	89	.9	15	0E-42	EP-32	83	EP-33	95	06	85	EP-29	EP-35	83	94	EP-36	EP-35	66
	EVENT		Health Education Program	Teleconference Demo.	Continuing Medical Education	Stereo Simulcast	Explorer-20 yr. anniv.	Ed. Curric. Sharing, Ind. & Univ. Research	Am. Library Association	TeleconfOffshore Oil Drilling	Am. Assoc. for Adv. Sci Annual Meeting	Adv. of Students in Science and Technology - Forum	IEEE	Continuing Ed. Conf.	UM #20	Shuttle - Remote Man. Syst.	Health Care Conference	Interview with Calio	NOAA Teleconf.	MSFC Symposium	American Indian Conf.	AIAA	Teleconf. with AID	So. Baptist Conven.	Elementary Student Prog.	Teleconf. with Congress	Teleconf. with AID	Cal State Rehabilitation
	DATE	1978	1/10-1/22	1/13	1/28-1/29	1/7	2/2	2/7-2/9	2/8	2/11	2/14	2/14	2/23	2/25-2/28	3/7	3/9-3/30	3/17	3/23	3/28	3/30	4/10-4/14	4/24-4/27	4/26	4/26	4/26	4/27	4/28	5/3
	0		54	25	26	57	28	29	60	61	62	63	64	65	99	29	89	69	70	7.1	72	73	74	75	16	11	78	79

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LOCATION		Disney World, FL/ GSFC, MD/ ARC, CA	Disney World, FL/Wash., DC	Balt., MD/Albuquerque, NM/ San Antonia, TX	Bethesda, MD/Seattle, WA/ Denver, CO/Palo Alto, CA	Wash., DC/San Prancisco, CA	St. Louis, MO/V.A. Hosp.	LeRC, OH/GSFC, MD	NASA Hg., DC/Milwaukee, WI	NASA Hg., DC/LeRC, OH	NASA INg., DC/Denver, CO	NASA Hg., DC/Minne, MN	ARC, CA/Silver Spg., MD	NASA Hg., DC/Syracuse, MY	Vicksburg, MS H18	Buffalo, NY	ARC, CA/LeRC, OH Expt. 7	UN-NY/Buenos Aires, Argentina	Augusta, ME	Hanover, NH/Augusta, ME	Racine, WI	CA, HO	Ann Arbor, MI/GSFC, MD	Chicago, IL/LeRC, OH	Chicago, IL/LeRC, OH	Lerc, OH/ARC, CA/GSFC, MD
EXPERIMENT		PRG/PET	25/PET	PRJ/TET/6	7	A18	1/VA Mob.	L18-G18	25/PET	1.18	1/52	21/TET	21/PET	25/PET	PRJ/PET/I	G18/TET/I	A18	PRG/PEN	21/TET	21/TET	PRJ/PET	7	21/PET	PRJ/PET	PRJ/TET	L18
DEMO. REQ. NO.		6	EP-37	87	81	7.2	92	EP-44	EP-45	EP-39	EP-46	97	100	EP-47	107	86	EP-51	96	108	116	112	113	105	102	103	104
BVENT		Frost Prevention Teleconf.	Representative Fugua	Disaster Simulation-Balt. AP	Family Symposium	Asian-Pacific Conf.	Am. Med. Assoc. Conv.	Teacher's Workshop	Rep. Henry Reuss	AID Conference	State Legislators Conf.	Am. Assoc. of Schl. Admin.	UNICON Sci. Fi. Conf.	Rep. James Hanley	River Control Conf.	Science Ed. Seminar	Satellite Connectivity	U.N. Tech. Conference	Am. Hosp. Assoc. Conf.	Med. Interaction Conf.	Joint U.SCan. Exptrs. Conf. 6 UM 21	Shuttle Safety Mtg.	Info. Mgmt. Conf.	Student Space Program	Chicago Space Watch	Theological - Science Interaction Conf.
DATE	1978	5/8-5/10	5/10	5/12	5/17-5/19	L/9	6/19-6/21	6/28	6/28	87/9	9/1	8/L	8/1	72/1	8/10-8/15	8/17	8/24	6/6-5/6	9/12-9/14	9/14	9/19-9/20	9/22	9/28	10/2-10/5	10/9	11/15
NO.		80	81	83	83	84	82	98	87	88	83	06	91	92	93	94	95	96	97	86	66	100	101	102	103	104

	LOCATION		Columbus, OH/Balt., MD	LeRC, OH/CRC, Canada	GSFC, MD/Purdue U., IN/ U. of Mich., MI		ARC, CA/Glassboro, NJ	Seattle, WA/Boise, ID/ American Falls, ID/ Helena, MT	Milwaukee, WI/GSFC, MD	Hanover, NH/LeRC, OH	Boulder, CO/GSFC, MD	Denver, CO/Roundup, MT	LeRC/CRC (Ottawa)	Boulder, CO/GSFC, MD	ARC, CA/GSFC, MD	ARC, CA/VA Hospital Network (ATS-6 to Alaska)	Portage/LeRC, OH	LeRC, OH/Hanover, NH	Birmingham, MI/LeRC, OH	Raleigh, NC/GSFC (Hq.), HD	Bethesda, MD/VA Network	Lincoln, NB/GSFC, MD	Denver, CO/LeRC, OH
	EXPERIMENT		18G/PET	A18	PRJ/PET/TET		PRJ/TET	13/PET	21/12	G18/I	G18/I	21/11/PET	PRJ	618	A18/H18	21	1118	21	PRJ	21	21	21	£18
DEMO. REQ.			111	121	110		122	125	124	og. 118	126	. 127	131	135	EP/60	129	130	09. 134	119	for 139	128	133	132
	Event		Mayoral Conf.	Venus Encounter	Teacher's Conference		Glassboro-Ames Teleconf.	WAMI Rural Medicine	WMVS Teleconference	Hospital Com. Net. Nurse Prog.	NOAA Teleconference	Nat. Translator Assoc. Demo.	Elementary School Teleconf.	NOAA Teleconference	EEOP Conference	Catholic Conf.	Portage Public School	Hospital Com. Net. Nurse Prog.	S.E. Oakland G & T Prog.	North Carolina Task Force f Public Telecommunications	American Journal/Nursing	Hearing Impaired Symposium	U.S. User Heeting No. 22
	DATE	1978	11/20	12/10	12/15	1979	1/6	1/19-2/2	1,26	9/2	8/2	2/10-2/12	3/1,3/22	3/8	3/22	3/24	3/25-3/29	4/4	4/2,4/4,4/6	4/13	4/16	4/18	4/18
	NO.		105	106	107		108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124

AIB = CTS Experiment No. 18 at Ames Research Center G18 = CTS Experiment No. 18 at Goddard Space Flight Center L18 = CTS Experiment No. 18 at Lewis Research Center J18 = CTS Experiment Ho. 18 at Johnson Space Center PRJ = Project Office Headquarters PRG = Program Office Goddard

I and II = Class I and Class II Terminals

EP - INTRA MASA PET = Portable Earth Terminals TET = Transportable Earth Terminals

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SECTION 6 KEYWORD VERSUS EXPERIMENT NUMBER

Each experiment was given keywords that classified the nature of the experiment. These keywords were assigned by the authors of this report and are consistent within the entire report.

This section lists the keywords by experiment number so that the reader can easily identify all experiments that had to do with a given keyword. The keywords used apply not only to category of experiment, but other data as geographic location and type of satellite.

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